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LECTURES

ON

PHRENOLOGY;

BY GEORGE COMBE, Esq.

INCLUDING ITS APPLICATION TO THE PRESENT AND PROSPECTIVE CONDITION OF THE UNITED STATES.

WITH NOTES, AN INTRODUCTORY ESSAY, AND AN HISTORICAL SKETCH;

BY ANDREW BOARDMAN,

RECORDING SECRETARY OF THE PHRENOLOGICAL SOCIETY OF NEW YORK.

"This is truth though at enmity with the philosophy of ages."—Gall.

LONDON:
SIMPKIN, MARSHALL, & CO.
EDINBURGH:
McLACHLAN & STEWART.

1839.

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Cape Cottage, Portland, Maine.
30th July, 1839.

ANDREW BOARDMAN, ESQ.

My dear Sir,

I have read your reports of my Lectures on Phrenology, and beg to express my satisfaction with their essential correctness. You ask if I have any objection to your publishing the reports in a separate volume.—As the American publishers of my works, Messrs. Marsh, Capen, Lyon & Co. of Boston, have given their consent, you have my full concurrence in your doing so.

I am,
My dear Sir,
Yours sincerely.
GEORGE COMBE.

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In the Clerk's Office of the District Court of the Southern District
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PREFACE.

PHRENOLOGISTS, deeply regretting that opinions the most defamatory and erroneous were promulgated concerning the science of their convictions and affections, producing a prevalent belief that it is the effusion of a bewildered imagination, believed in only by the weak and enthusiastic, hailed the arrival of Mr. Combe with peculiar pleasure, confident that his labours would greatly tend to give currency to more correct views. But knowing the small proportion that his audiences, however numerous, would bear to the whole community; knowing too, the fleeting nature of unwritten words, I determined, in an humble way, to aid his efforts to diffuse a knowledge of that science to which he has devoted his future life. I accordingly offered to furnish the New-York Daily and New-York Weekly Whig with condensed reports of his lectures. These were accepted, published, and eagerly sought after. The publisher said that nothing issued in this city during last winter, "had taken so well." They were copied in part, by various papers throughout the Union, and entire by the Toronto Palladium.

I commenced these reports without the faintest idea of ever deriving from them pecuniary advantage, or of ever publishing them collectively; but being urged to do so by several gentlemen, friendly to Phrenology, of high standing in the medical profession, I mentioned the proposition to Mr. Colman, who offered to form an arrangement with me for carrying it into effect. I wrote to Mr. Combe for permission, who generously gave to me his "hearty consent."

Previously to concluding the foregoing arrangements, Mr. Combe had yielded to the solicitations of his New-York friends, that he would again lecture in this city. I determined, therefore, not to publish till having taken notes of his second course. On this being known, the editors of the New-Yorker desired the use of my future reports, and effected an arrangement with Mr. Colman, in consequence of which they were published in their ably conducted journal. These have been carefully revised and corrected, and additions to them made. So altered, they constitute the reports of this volume, to the "essential correctness" of which the reader has the best of all testimony, that of Mr. Combe himself.

For the original annotations, the Introductory Essay, and the Historical Sketch, I alone am responsible. In the latter, I might have spoken of the phrenological lectures of numerous American gentlemen, besides those mentioned, had such a course been compatible with my limits. That it was not I regret.

I learn that the Southern Literary Messenger is copying the reports entire from the New-Yorker. Whether any other periodical is doing so I am not informed, but if not my original desire is most amply gratified. Beside the numerous extracts which have appeared in other papers, the number of the entire reports distributed throughout the United States and British America, in the New-York Daily Whig, the New-York Weekly Whig, the Toronto Palladium, the New-Yorker, and the Southern Literary Messenger, will exceed *twenty-five thousand*.

With these explanatory remarks, I respectfully submit this work to the public. A. B.

East-Broadway, New-York, August, 1839.

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MR. COMBE.

Whoever has seen Mr. Combe will recognize the accuracy of the accompanying profile taken by Monsieur Edouart,[*] in that style which Lavater preferred to all others for giving the characteristic expression of the countenance. Those who have both seen and heard him can need their impressions neither fixing nor deepening. For those, especially phrenologists, who have not, the following sketch may possess some interest.

Mr. Combe is rather tall and spare, with a narrow chest, large head, and nervous-bilious temperament. His hair, of silvery whiteness, is so thinly scattered as to leave considerably exposed his beautifully developed frontal and coronal regions, indicating that fine predominance of the moral and intellectual forces which his works so eminently manifest. The reflective are, however, evidently his most effective faculties. His form is slightly bent, not from lack of Self-Esteem, but from habitual thoughtfulness and feeble physical organization; this slight bend and thoughtful aspect, with the snowy whiteness of his hair, give the impression that he is much older than the kirk-register allows; the newspapers generally have stated his age at sixty; though he has, in fact, passed his fiftieth birth-day in the United States. He has enough of his "native wood-note wild" to indicate that he sprung from "the land of the mountain and flood," but not so much as to impair distinctness of utterance or correctness of pronunciation.

Mr. Combe is not a splendid lecturer, nor a brilliant lecturer, nor a fascinating lecturer. The current coin of eulogy, "gorgeous fancy," "thrilling eloquence," "withering sarcasm," "effulgent grace," would be all inappropriate if applied to him. His language is full and flowing; his style familiar, chaste, earnest, and unambitious. You see from the first that he has a passion for truth; that his great aim is to enlighten the understanding, elevate and purify the feelings; and in his intentness of purpose to accomplish that aim, all clap-trap artifices are elbowed off the stage.

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[*] This gentleman, whose abilities as a Silhouettist are, I believe, unsurpassed, has recently arrived from England, and taken up his residence in New-York, where he is now pursuing his professional avocations.

His subject is arranged in natural consecutiveness in his own mind, and imparted in that order to the minds of others. His ideas do not bustle and jostle for precedence, each has its adjusted place wherewith it must be content. He states his propositions clearly, and proceeds at once to adduce the most striking analogies, appropriate illustrations, and convincing proofs, making every proposition, as far as practicable, the foundation of that which succeeds. By this methodical mode of procedure, the memory is greatly aided, and the judgment much gratified.

It is said by Voltaire, that the art of interesting is the art of writing. The saying is eminently applicable to lecturing, and this art Mr. Combe possesses in a great degree; few can better rivet attention, or more intensely interest the nobler feelings of our nature. This sketch would be incomplete without reference to that uuder current of hnmour which so often sparkles to the surface, lighting up with peculiar brilliancy the lecturer's vivacious eye, and affording amusement while it is used to impress on the memory important facts and principles.

In conclusion, I would say that the lecturer creates an interest in himself as great almost as in his subject, not by egotism in any of its Protean forms, but by the union of profundity of thought with simplicity of manners and benevolence of disposition. As he proceeds, the conviction wins imperceptibly on the mind that he forms one of that noble class—the great and good.

MR. COMBE'S LABOURS IN THE UNITED STATES.

Mr. Combe landed in New-York, September, 1838. His arrival was hailed by phrenologists with peculiar interest and pleasure, and he was received by all with the respect and courtesy due to his high character and beneficent labours. On the 10th of October following, he commenced at Boston his first course of lectures in the United States, to a somewhat numerous and highly intelligent audience, a great proportion consisting of members of the learned professions. Of these lectures, the Boston Medical and Surgical Journal remarks, "With a few interruptions, we have bestowed a thorough attention on the lectures of this distinguished philosopher, since their commencement in Boston. We feel no half-way sentiments upon the matter; nor are we disposed to suppress what we unflinchingly acknowledge to be true, viz. that Mr. Combe is a profound man, who gains upon the understanding from day to day, by the simple presentations of truth. He must be regarded as an able, nay, unrivalled teacher of a system which can alone explain the phenomena of mind." At the close of this course, November 14th, 1839, the audience passed a series of resolutions highly commendatory of himself and of his lectures. I wrote to the secretary of that meeting requesting a copy of the resolutions, which unfortunately he had misplaced. On the succeeding evening, a social entertainment was given to Mr. Combe at the Tremont House, at which he was presented with a valuable silver vase of chaste and elegant workmanship.

Mr. Combe's second course of lectures commenced in New-York, on the 19th of November, and closed on the 24th of December, 1838. Here his audience was much of the same character as at Boston.

At the close of his course, the following resolutions were unanimously adopted:

"*Resolved*, That the members of the class who have attended the course of phrenological lectures delivered by George Combe, Esq., at Clinton Hall, entertain a lively sense of obligation to the distinguished lecturer for the valuable information he has communicated to us during the lectures just closed; that we have been greatly pleased and instructed by the clear, felicitous, and convincing manner in which he has imparted to us his varied and profound knowledge of the philosophy of mind; and that we regard phrenology as eminently calculated to advance the cause of education, to improve the institutions of society and of government, and to elevate the condition of the human race.

"*Resolved*, That in Mr. Combe we recognize the most successful advocate of phrenological science, the philosopher and the philanthropist; and that phrenology, as explained and illustrated by him, claims, in our opinion, the attention of all those who would investigate mind philosophically, and who desire the diffusion of truth and the exaltation of the moral and intellectual faculties of man.

"*Resolved*, That in the application of phrenology to the investigation of human character, and the practical purposes of life, we perceive a new era in mental and physiological science, in which we believe human enquiry will be greatly facilitated, and the amount of human happiness essentially increased.

"*Resolved*, That inasmuch as prejudice may deter many individuals from attending Mr. Combe's lectures in other cities of our country, which he proposes to visit, and as the truth and importance of phrenology can be understood and appreciated only after an examination of its principles, we recommend to such citizens an attendance upon his *entire course*; being convinced that they will find their own advantage in doing so, and that they will thereby become better able to judge of the truth and practical utility of the science.

"*Resolved*, That entertaining these views and feelings, we take great pleasure in tendering an expression of them to Mr. Combe, and in adding our most hearty wishes for his personal happiness, and for his long-continued usefulness to his fellow-men.

"*Resolved*, That Silas Jones, Esq., Counsellor at Law and Superintendent of the New-York Institution for the Blind; Judah Hammond, Esq., Judge of the Marine Court; John B. Scott, Esq., Judge of the Marine Court; Loring D. Chapman, Esq., Member of the New-York Legislature, &c.; Robert Sedgwick, Esq., Counsellor at Law, &c.; C. A. Lee, M. D., Professor of Materia Medica in the New-York University; B. F. Joslin, M. D., Professor of Mathematics and Natural Philosophy in the New-York University; E. Parmley, M. D.; J. Neilson, M. D.; J. W. Francis, M. D.; A. S. Doane, Professor of Physiology in the New-York University; Caleb Ticknor, Professor of Hygiene in the New-York University; and Joel Foster, M. D., be a committee to present to Mr. Combe the foregoing resolutions, and to publish the same in the newspapers of this city."

JOHN B. SCOTT, Chairman.

NEW-YORK, Dec. 22, 1838.

On four of the evenings unappropriated to his phrenological course, Mr. Combe lectured to the New-York Mercantile Library Association, on the physical constitution of man and its relations to the mind. These lectures were attended by overwhelming audiences.

Mr. Combe's third course was commenced in Philadelphia, on the 4th of January, and ended on the 8th of February, 1839. The numbers in attendance ranged from 441 to 607, the former number being that with which he commenced. The great attentions which he received in the most scientific city of the Union, must have been peculiarly gratifying to the lecturer. At the close of this course, the following resolutions were unanimously adopted:

"*Resolved*, That they have listened with great pleasure and mental profit to the comprehensive views of human nature, and to the elucidations of individual character, set forth by Mr. Combe, in his lectures just completed; and, that, in these, they recognize many important suggestions for the improvement of Education and Jurisprudence, and the consequent increase of the happiness of mankind.

"*Resolved*, That a committee be appointed to convey to Mr. Combe the preceding resolution, and a wish, on the part of this meeting, that he will be induced to repeat his course of lectures on phrenology."

The following gentlemen were appointed a committee to carry into effect the foregoing resolutions, viz.—Nicholas Biddle, LL. D., Joseph Hartshorne, M. D., Benjamin W. Richards, William Gibson, M. D., Thomas Harris, M. D., Alexander Dallas Bache, Rembrandt Peale, Charles Picot, John Bell, M. D.

In compliance with the last resolution, and the earnest solicitations of many private individuals, Mr. Combe delivered a second course at Philadelphia, between the 20th of March and the 6th of April inclusive. Having meanwhile visited Washington and other places, and delivered at Wilmington a short course of lectures on Physical and Mental Education.

At the close of Mr. Combe's second course of Lectures on Phrenology, in the Hall of the Musical Fund, March 6, 1839,

On motion, Professor Samuel B. Wylie was called to the chair, and George McClellan, M. D. appointed Secretary.

The Rev. Chairman addressed the meeting on the propriety of making some public expression of the satisfaction which the very numerous class in attendance had derived from the lectures.

On motion, the following resolutions, offered by Mr. Thomas Fisher, were unanimously adopted:

"*Resolved*, That the class have listened with great interest to the able and highly instructive exposition of Phrenology which Mr. Combe has offered us.

"*Resolved*, That whatever may have been our previous acquaintance with the subject, the lectures of Mr. Combe have impressed us with much respect for its practical importance, and with the kindliest feeling for the learned lecturer.

"*Resolved*, That Phrenology is recognized and commended as a science founded in Nature, by a large portion of the most distinguished anatomists on both sides of the Atlantic, and that we believe it to be the only adequate illustration existing, of the wonderfully various manifestations of the human mind.

"*Resolved*, That it will afford us pleasure, and that we believe it will be highly acceptable to this community, that Mr. Combe should make it consistent with his arrangements in other cities, to give, during next winter, another course in Philadelphia.

"*Resolved*, That a committe of seven gentlemen be appointed to communicate to Mr. Combe a copy of these resolutions."

The following gentlemen were accordingly appointed—Samuel B. Wylie, D. D., Samuel George Morton, M. D., George McClellan, M. D., Charles S. Coxe, Esq., Joseph Hartshorne, M. D., Thomas Gilpin, Esq., Thomas Fisher.

During Mr. Combe's stay in Philadelphia, a number of gentlemen in New-York were engaged in organizing a class, that they might obtain the services of Mr. Combe, a second time. An invitation was sent, and Mr. Combe consented to repeat his course in New-York. He commenced on the 13th of April, and closed on the 18th of May.

At a meeting of the Class, held on the 15th of May, the following gentlemen were appointed a Committee to prepare and report a paper and resolutions, expressive of the sentiments of the Class upon the subject of said Lectures, and their feelings towards Mr. Combe as a Lecturer, to wit:—Rev. Mr. Sawyer, Mr. Boardman, Rev. Mr. Sunderland, and Mr. E. D. Hurlbut. On the 18th, Mr. Hurlbut, from that Committee, reported the following paper and resolutions, which were unanimously adopted:

"The second course of Lectures upon Phrenology, delivered in this city by Mr. George Combe, of Edinburgh, having closed, the members of his class are desirous of expressing their views of the science which he has taught, and the sentiments entertained by them toward the distinguished Lecturer, personally.

"He has presented to us the wonderful discovery of Dr. Gall, and its practical influence upon the character and condition of man. That discovery was characterized by the most minute attention to the laws of our organization, by the most patient observation of facts, and by the deduction of inevitable conclusions from them.

"Dr. Gall abandoned the school of metaphysical speculation; and taking to the observation of Nature, he at length presented to the world his great discovery of the true functions of the brain, and of its various parts. We now look to Nature for the foundation of the noble science of mental philosophy; and the enlightened mind of the old world, and of the new, is now engaged in illustrating and establishing it.

"Our own country has been twice honoured by visits from the earliest and most gifted advocates of this science. The noble and accomplished Spurzheim, a name sacred to every friend of man, fell a victim to disease upon our shores, while just opening the rich fountain of his well-stored intellect to an American audience. The language of eulogy fails altogether when employed upon so noble a nature as his.

"But for this we thank him—that he directed the mind of a Combe to the sublime truths he had himself embraced, and allowed his mantle to descend upon the gifted individual to whom we have all listened with intense interest and delight. How nobly has he executed in our country the work which his 'great and lamented master' had begun!

"He came not among us to earn applause, for of that he had already enough; nor treasure, for we are happy to know of that he had no occasion to go in search. He came not seeking controversy—being no less distinguished for his love of peace than for his devotion to science. But he came as a minister from the enlightened mind of the old world to treat with the intellect of the new, upon matters of the deepest concern to the human race.

"His message was of the highest importance to us all. It interested us as students of Nature's laws, as observers of their manifestations, as speculators in mental philosophy, and as friends of education. It opened new views of man's moral and intellectual character, and well nigh explained the mystery of *thought*, that most sublime emanation from the Divinity of Nature. It taught the discipline of youth—how to inform their intellect, to elevate their sentiments, and to moderate their passions. It pointed the way of happiness to man by exhibiting the sources of human virtue, and its effects;—the causes of vice, and *its* effects upon his condition in life. It presented the most rational and humane view of moral responsibility, and explained and enforced the whole duty of man. And in this, his last and crowning Lecture, Mr. Combe has opened the treasures of his knowledge of the political institutions of the old world, faithfully portrayed their defects, their subversion of human liberty and happiness, and contrasted with them the free institutions of our own country, and their happy influences upon the moral and intellectual condition of our citizens.

"And now, having attended upon the gifted Lecturer through his various illustrations—his well-authenticated facts, and heard his sound deductions drawn from them, we hasten to express our profound sense of obligation to him for the instruction he has afforded us, and our high appreciation of the doctrines he has so ably maintained.

"Be it therefore,

"*Resolved*, That we regard Phrenology as having its foundation in the truths of Nature, and as entitled in point of dignity and interest, to rank high among the natural sciences.

"*Resolved*, That we regard the practical application of Phrenological principles to physical training, to moral and mental education, to the treatment of the insane, and to criminal legislation, as of the highest importance and utility; and we indulge the hope of witnessing in our own day the beneficial results of such application in the increased happiness of our hopes, in the improved condition of our seminaries of learning, in more enlightened legislation, and in the more benign influences of our civil and religious institutions.

"*Resolved*, That the extensive knowledge and sound philosophy which Mr. Combe has exhibited in the course of his Lectures, have inspired us with a profound respect for his intellectual power and attainments; and while the simplicity of manner and the purity of style with which he has conveyed the most interesting truths evince a highly cultivated taste, the generous enthusiasm with which he has embarked in the cause of humanity commands an admiration of his sentiments equal to the respect we entertain for his understanding.

"*Resolved*, That, entertaining such opinions of the science with which Mr. Combe has identified his life and fame, and such sentiments toward him as a lecturer and a man, we beg to tender to him the expression of our heartfelt gratitude for the instruction and delight he has afforded us, and our kindest wishes for his prosperity and happiness through life.

"On motion, it was *Resolved*, That the gentlemen who reported the foregoing paper and resolutions constitute a Committee to present the same to Mr. Combe."

J. T. SAWYER, Chairman.

A. BOARDMAN, Secretary.

On the evening that the Committee was appointed to draw up the foregoing resolutions, it was mentioned that a number of gentlemen, desirous of evincing in a more enduring manner their sense of Mr. Combe's merits, and of the important doctrines which he promulgated, had commenced a subscription for that purpose. The announcement was cordially received—a meeting was called at Mr. Hurlbut's office the ensuing evening, at which the following gentlemen were appointed a committee with full powers: Mr. E. D. Hurlbut, Mr. Wm. J. Mullen, Captain Dewey, and Mr. A. Boardman.

They determined on presenting a vase, which will, I think, be one of the most beautiful specimens of art which America has produced. Too much credit cannot be given to Captain Dewey, for his assiduity in attending to the general business of the committee, nor to Mr. Mullen, by whom the plan of the vase was drawn, and under whose direction and superintendence its execution has thus far satisfactorily progressed, and will doubtless be completed.

The vase is of exquisite form, and contains fifty ounces of silver. On one side will be chased the heads of Dr. Gall, Dr. Spurzheim, and Mr. Combe, over which will be the motto: "RES NON VERBA QUÆSO," and around the latter a wreath containing the words—"System of Phrenology," "Constitution of Man," &c. On the other, will be chased the busts of Dr. Rush, and Dr. Caldwell, together with the following inscription:

PRESENTED
TO
GEORGE COMBE, ESQUIRE, OF EDINBURGH,
BY THE MEMBERS OF THE CLASS IN ATTENDANCE UPON
THE LECTURES DELIVERED BY HIM IN THE
CITY OF NEW-YORK,
In the year 1839, on the subject of
PHRENOLOGY;
In testimony of their profound respect for the distinguished Lecturer, personally,
and their belief in and admiration of
THE NOBLE SCIENCE,
OF WHICH HE IS THE ABLEST LIVING TEACHER AND EXPOUNDER.

The base of the vase will be ornamented with the skulls of various animals, as emblematical of comparative Phrenology.

ESSAY

ON THE

PHRENOLOGICAL MODE OF INVESTIGATION.

ON its being observed to a scientific pretender, that facts were at variance with a hypothesis which he had announced, he replied indignantly, "So much the worse for the facts." Like this was the language of almost all expounders of natural science antecedent to the seventeenth century. They worshipped the shadow of a mighty name. The Aristotelian philosophy held undisputed sway. Mahomedan, Jew, and Christian, vied with each other in hugging the chain of scholastic bondage, deeming a quotation from the stagirite adequate to establish the grossest absurdity, or refute the most obvious truth. So far did this infatuation reach, that, in some of the Universities, statutes were framed, requiring the professors to promise, on oath, to follow no guide but Aristotle; and the French parliament, under Francis I., pronounced Peter Ramus to be "insolent, impudent, and a liar;" and for all coming time, condemned, suppressed and abolished his books, prohibiting him from copying or even reading them, because he had publicly disputed the doctrines of the Greek; nay, to attack these doctrines was, by legislative acts, rendered punishable by the galleys! The following incident in the life of Galileo well illustrates this prostration of reason to authority.

The Grecian philosopher had asserted that if two bodies, of like material, were let fall at the same time, from the same height, the heaviest would reach the ground as much sooner than the other, as it exceeded that other in weight; that is, if it were fifty times as heavy, it would fall with fifty times the velocity. Galileo appealed from Aristotle to observation, and maintained that, with the exception of a very slight difference, occasioned by the opposing air, both bodies would reach the earth in equal times. This proposition was rejected as false, and scowled on as presumptuous; so to demonstrate its truth, he took his opponents to the famous tower of Pisa, and let fall two weights from its summit; yet with the evidence of their eyes to the equally rapid descent, with the simultaneous sounds still ringing in their ears, the Aristotelians turned sneeringly and unbelievingly away, quoting the stagirite! Through such thick clouds of error, prejudice, and bigotry, difficult indeed it was, for the light of science to pierce, and if now and then a ray of truth, from some bright and independent genius, struggled through the enshrouding darkness, it was like a solitary star on a dreary night, rendering "darkness visible."

The Greeks having settled it in their own minds that a circle is the most perfect of figures, concluded that the movements of the heavenly bodies must be performed in exact circles, and with uniform motions, when the plainest observations demonstrated the contrary.

"In the sixth century, Cosmas Indopleustes gravely taught, that the earth was an oblong plane, surrounded by an impassable ocean; an immense mountain in the form of a cone, or sugar-loaf, placed in the north, was the centre, around which sun, moon, and stars daily revolved; the shape of this mountain, and the slanting motion of the sun, accounted for the variable length of the days, and the changes of the seasons. The heavens were supposed to be an immense arch, one side of which rested on the earth, and the other on two mighty pillars beyond the sea; under this vault a multitude of angelic beings were employed in guiding the motions of the stars."—(*Account of Lord Bacon's Novum Organon Scientiarum*, p. 5.)

In the sixteenth century, Gerolamo Fracastora, in his Homocentrica, considered one of the best productions of the day, maintained that all the stars are carried round the earth, *fastened to solid concentric spheres*, and to prove the necessity of such agency he "reasons" thus: "The planets are observed to move one while forwards, then backwards, now to the right, now to the left, quicker and slower by turns; which variety is consistent with a compound structure like that of an animal, which possesses in itself various springs and principles of action, but is totally at variance with our notions of a simple and undecaying substance, like the heavens and heavenly bodies. For that which is simple is altogether single, and singleness is of one only nature, and one nature can be the cause of only one effect; and *therefore it is altogether impossible that the stars of themselves should move with such variety of motion.* And besides, if the stars move by themselves, they either move in an empty space, or in a fluid medium like air. But there can not be such a thing as empty space, and if there were such a medium, the motion of the stars would occasion condensation and rarefaction in different parts of it, which is the property of corruptible bodies, and where they exist some violent motion is going on; but the heavens are incorruptible, and are not susceptible of violent motion, and HENCE, and from many other similar reasons, any one WHO IS NOT OBSTINATE may satisfy himself that the stars *cannot have any independent motion.*"* Such were the loose assertions, rash assumptions, and wild imaginings, dignified by the name Philosophy. Men strove to explain phenomena by reasoning on their own conjectures, by hypotheses fanciful as fairy tales, and, at the best, by a loose application of general principles, drawn with reckless haste, and presumption, from a few ill-observed facts. This was the prevalent mode of philosophising. Had such speculations and reasonings been merely the occasional ebullitions of wayward minds, to adduce them as characteristic of the philosophy of the ancient and middle ages, would be as unfair as it would, in after times, to adduce the antiphrenological tirades of the present day, as characteristic of the philosophy of the age in which we live.

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* See life of Galileo Galilei, by Drinkwater.

At the commencement of the seventeenth century appeared Lord Bacon, one of the most remarkable men the world has produced. With " his supreme and searching glance, he ranged over the whole circle of the sciences," detected the absurdities of the schoolmen, and exposed them with a vigorous and unsparing hand. He dethroned the Aristotelian idol which had for ages received the blind fealty of a world, and, fortunately for science and humanity, attempted not to substitute an idol of his own, but pointed to nature as alone worthy of homage. "Man," said he, in the opening sentence of his immortal work, " the servant and interpreter of nature, understands and reduces to practice just so much of nature's laws as he has *actually experienced*, more he can neither know nor achieve." Now this experience Bacon maintained must be acquired by *observation*. To observe facts, then, is the first great business of the investigator. Facts may be divided into the *presented* and *produced*. The first being such as nature offers to our observation without any aid or interference of ours; the second being such as occur in consequence of our putting in action, causes and agents over which we have control. Instances of the last class are usually called experiments, and their production and observation Lord Bacon significantly terms "asking questions of nature." Thus the increase of size in the human head, from infancy to adult age, is a fact presented to our observation. But the division of the anterior root of a spinal nerve, for the purpose of observing the loss of motion, is a produced instance or experiment. It must be remembered, however, that if facts be well scrutinized and verified, they are of equal value, whether presented or produced: but the former, are almost the only ones employed in phrenological investigations.

Observation, then, being the only true means of laying a foundation for the discovery and establishment of truth, we should dismiss from our mind, all preconceived notions of what *should be* or *might be*, and try carefully to ascertain *what is*. This rule was neglected by Ludovico Dolci and others who maintained that the cerebellum must be the seat of memory, because its low and out of the way situation so admirably fitted it for a mental store-house. It was adhered to by Gall, when, neglecting the assertions of those who maintained that mental capacity ought and must, at birth, be equal in all, he observed and maintained that vast differences do in reality exist.

But we must bear in mind that isolated facts are of small value. They must be brought together carefully and patiently; must be rigidly scrutinized and verified, compared and classified, for the purpose of ascertaining some relation of sign and power, cause and effect, general principle, quality, or mode of activity. To achieve such results is, indeed, the great object and triumph of the Baconian philosophy. By such observation, comparison, and classification, it has been discovered for example, that a certain state of the barometer indicates a certain elevation above the level of the sea; that increase of heat causes bodies to expand; that all the individual plants of the crow-foot tribe are more or less acrid and poisonous; that the sun modifies the moon's influence on the tides. Or, to take another series of examples. By this method it has been ascertained that a large skull indicates a large brain, and that a large brain causes a large skull; that persons having a brain weighing but one and a half pounds are invariably idiotic; that a predominant coronal region gives a general tendency or disposition towards virtue, and that education has the power of modifying the constitutional tendencies of our nature.

The fundamental error of ancient philosophy was the notion that a general cause must be first *divined or conjectured*, and then applied to the explanation of particular phenomena; they perceived not the plain but momentous truth, that a general fact is nothing else than a fact common to many individuals, and consequently, that the individual facts must be known, before the general fact can be stated. Hence, instead of first *ascertaining* by direct observation, the relative velocity of two descending bodies differing in weight, then of two others—persisting with new experiments until enough of instances had been observed to justify an assumption of uniformity, Aristotle first *assumed* a gross error as a general fact, and then *inferred* it of any two bodies whatever. His reasoning was correct, but his premiss was false. He attended to logics but utterly neglected induction.

But, besides pointing out the true method of investigation, the Baconian philosophy furnishes a number of tests by which we may know when two facts bear to each other the relation of cause and effect, or of sign and power. These are,

1. "Invariable connection."

2. "Invariable negation of the effect, with absence of the cause."

3. "Increase or diminution of the effect, with the increased or diminished intensity of the cause."

It further teaches us that, "we are not to deny the existence of a cause in favour of which we have a unanimous agreement of strong analogies, though it may not be apparent how such a cause can produce the effect."*

For example, suppose a dark line be observed *invariably to exist* on the forehead of man, and on the heads of all such animals as sing, or recognize the melodious succession of notes, and to be *invariably absent* from the heads of such animals as do not sing, or manifest such recognition. Again, suppose the musical faculty to be possessed by different individuals, of the same species, in different degrees. A long line being invariably accompanied by great musical power, and a short line by feeble musical power, the *power varying in strength in proportion as the line varied in length.* Here we should have that "invariable connection," that "invariable negation of the effect, with absence of the cause," and that, "increase or diminution of the effect, with the increased or diminished intensity of the cause," which would unavoidably lead us to recognize one of the phenomena as the cause or sign, and the other as the effect or power, notwithstanding that we might not be able to conceive how a dark line, and the musical talent, should be so related. Now what is here supposed of the black line, is demonstrably true of a certain portion of the brain, with this advantage, that the brain is admitted by all to be an adequate material, or proximate cause of mental manifestation. The organ of tune is developed in all animals which have the musical faculty, and undeveloped in all such as have it not. In such as have it, the organ and faculty are always directly related in size and power.

To pretend, with some, to trace all the magnificent discoveries of modern times to the Novum Organon, as to the fountain whence they sprung, would be erroneous. Ere Bacon appeared, the art of printing had been diffused; men had commenced to ask the *why* of all existing institutions, the reformation had shaken the ancient empire of superstition to its foundation. John of Salsbury, Roger Bacon, Gilbert, and Copernicus preceded him; Galileo and Kepler were his contemporaries. The Novum Organon must, therefore, be considered as a manifestation, rather than a cause, of the philosophic spirit which, about that time, simultaneously burst forth. We must remember, too, that Gilbert, Galileo, and others had recognized the inductive, as the true method of investigation, before the appearance of Bacon's great work, as Gall did afterwards, before knowing of its existence.

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* Discourse on the study of Natural Philosophy, by Sir John Herschell, Nos. 145 and 148.

But, though the principle of induction had been recognized, to Bacon belongs the great honour of placing it, by his noble ardour and giant power, in deserved pre-eminence, as the true, the only method in which nature can be so questioned, as to induce her to reveal her hidden agencies and laws of action. He destroyed for ever, the philosophic pretensions of those who essayed to explain natural phenomena by reasoning on conjecture. And, by showing the nobleness of their employment, who were laboriously engaged in minutely investigating and comparing particular phenomena, he forced the curl from the pedant's lip, and the scowl from the bigot's brow. It may be truly said that the dawn of the new philosophy had before appeared, but that "day waited" for Verulum.

As the glory and utility of logic depend on its not being merely *a* mode of reasoning, but *the* mode in which all correct reasoning must be performed,* so do the glory and utility of the Baconian method depend on its not being merely *a* mode, but *the* mode in which all discoveries must be made and established. By induction we ascertain the truth or falsehood of premises ; by logic, whether, from the premises, the announced conclusion is fairly deduceable. By the former we become acquainted with the previously unknown, by the latter we draw particular conclusions from general propositions, the truth of which is acknowledged.

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* See Elements of Logic by Archbishop Whately, book iv. chap. I. To those who, with Menage, define logic to be "The art of talking unintelligibly on things of which we are ignorant," I would recommend a perusal of the above admirable work. Logic has been abused by its pretended friends, and has therefore been denounced. Thus it is ever; the world, in its hurry to condemn, stops not to discriminate between the true uses of a thing, and the purposes to which it is applied; but visits upon the poor abused fact, or principle, the punishment due only to its abusers. Thus has it been with Phrenology. Many, for lucre's sake,

By means of the inductive philosophy, man, in these latter days, has been able to draw aside the veil of the inner temple, and become on "intimate terms with nature." To it, chiefly, do we owe our superiority over the dark ages, for it cannot be supposed that all at once the human intellect gathered vigour, and emerged from childhood to manhood. No ; it had lost its way, and become "in wandering mazes lost," and though vast powers were often times displayed, yet as they were displayed in weaving webs of subtlety and conjecture, nothing was achieved. Like the arts of the posture master, the displays of intellectual power were wonderful, but of small profit, and, by enlightened reason, could be accounted only as "fantastic tricks." The inductive philosophy brought men back to the true path, and in that path, advancement was not, as before, a departure from truth, but progress in it. No wonder, then, that we have surpassed our fathers, for, as Bacon well observes, even "a cripple in the right way may beat a racer in the wrong."

To this philosophy, then, do we owe the establishment of Phrenology, a science pregnant with more important influ-

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have dragged our noble science through the mire, by pretending to teach what they have never learned, and to determine the value of developments, of the significance of which they were ignorant. Phrenologists have ever been the first to warn the community against these self-styled friends, but worst of foes, and yet, in public and in private, have the crudities and mal-practices of these men been identified with the cause of Phrenology.

ences than the revelations of Galileo, of Harvey, or of Newton; making known as it does, the material instruments of mentality, unfolding as it does, the moral and intellectual constitution of man, and exposing as it does, the secret springs of thought and impulses of action; furnishing man with a middle term, which will enable him, as it were, to throw his own and external nature into one mighty syllogism, and educe human duty and human destiny.

The day is not far distant when it will be acknowledged by all, that no doctrines were ever established on a more extensive induction of rigidly scrutinized and verified facts, than were those of Gall. The length of time which he allowed to elapse between their dawn and promulgation; his entire devotion of life and property to their investigation; the bold but truth-loving spirit; the profound, comprehensive, discriminative, and practical understanding, every where manifested in his writings, place him at the antipodes of those speculative geniuses, who spend their lives in weaving webs of sophistry for the entanglement of human reason. To make this evident, to show in a manner satisfactory to all candid minds, that phrenology is a discovery, not an invention, that its doctrines are but the crowning stones to pyramids of facts, is the object of the present essay.

From his earliest youth, François Joseph Gall, remarked that his brothers and sisters, his play-fellows and schoolmates, manifested great diversity of disposition and talent, notwithstanding similarity of education and external circumstances. Some were remarkable for their attachment to, some for their disregard of truth; some were peaceable, others quarrelsome; some modest, others arrogant; some shone in composition, others had a harsh dry style; some excelled in calculation, others could not learn or comprehend the multiplication table. He remarked, too, that there was great uniformity in the character of each individual. No one remarkable for goodness one year, became remarkable for wickedness the next; no one remarkably arrogant and rude, did he ever know to become very humble and complaisant. He was thus impressed with the notion, that the dispositions, or original tendencies of the mind, are innate.

At the age of nine years* he first noticed a connection between prominent eyes and verbal memory. With the cause of that prominence he was then unacquainted, but afterwards ascertained it to be the predominant size of a certain cerebral convolution, which, by pressing on the posterior part of the superior orbital plate, pushed the eye outwards. This was the first observation which led the youthful philosopher to seek for external signs of the mental faculties. And let not a smile of incredulity play upon the lips because of Gall's early age. Mozart began to compose at the age of four years. Handel, almost as soon as he could speak. Colburn, at six, astonished the world by the rapidity with which he performed intricate arithmetical calculations. At twelve, Pope wrote his " Ode on Solitude." At thirteen, Wren had formed an ingenious machine to represent the course of the stars. At sixteen, Pascal published a work on conic sections. At the same age, Michael Angelo had executed works which were compared to those of antiquity. Newton, at twenty-five, had completed some of his most brilliant discoveries, and originated all he ever made. So true is the observation of Gall, that " from infancy man announces the character which will distinguish him in adult age." Nor let the seemingly trifling observation which he first made excite derision. It is the glory of genius to detect, in the every day phenomena of life, the clews to mighty principles. Thus, Pythagoras, from listening to a blacksmith's hammer, made a most brilliant discovery in acoustics. Galileo deduced the use of the pendulum, as a pulse and time measurer, from observing the oscillations of a lamp, swinging from the cathedral roof at Pisa. From noticing the phenomena presented by soap bubbles, Newton caught the first hint to some of his greatest optical discoveries, and from noticing the fall of an apple, he was led to unravel the subtle bond of the universe.

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* Chenivix.

It would be pleasant and instructive to follow Gall throughout his career of doubt, and difficulty, and discovery, and persecution, and noble self-reliance, and ultimate triumph; but space will not suffice, and I must hasten to show, more in detail, the spirit and mode in which phrenological investigations have been prosecuted, and the kind of evidence on which phrenological doctrines rest.

As preliminary to this, let us state some fundamental truths of phrenology, referring to the lectures for the proofs on which they rest.

1. The mental powers of man are innate, and their talents and dispositions are discoverable by observation.

2. By means of the brain, all the mental powers are manifested.

3. The mental manifestations result from various distinct mental powers; and ought, therefore, to have their seat in distinct parts of the brain.

4. Men differ much in their power of manifesting the various mental qualities; and brains differ much in size and form.

5. The outer surface of the head so nearly corresponds to the outer surface of the brain, that the size and form of the latter, are indicated by the size and form of the former.

6. By a comparison of mental manifestations in individuals of all varieties of age, station, talents, and disposition, with their cerebral developement, the seats of various mental organs have been clearly ascertained.

7. Size, other things being equal, is the measure of power; consequently, phrenologists are able to tell from

the size of an organ, its power of manifestation; and from the energy of its manifestation, its relative size.

I said that I would show more in detail, the spirit and mode, in which phrenological investigations have been prosecuted, and the kind of evidence, on which phrenological doctrines rest. To do this, I shall adduce the proofs of an organ, which may be readily observed. Perhaps none has been established by such an overwhelming accumulation of facts, as that of Amativeness; but, for obvious reasons, the facts are inadmissible in this essay. I, therefore, refer the professional reader to Gall's article contained in the third volume of his work, "Sur les Fonctions du cerveau, &c,"—but, more especially, to the late work of Mr. Combe, on the same subject;* and proceed to show the sort of evidence, on which we rest our belief concerning the seat of that organ, by which the love of young is manifested. I deem it better to exhibit at length, and in order, the chief proofs of one organ, than to mention promiscuously some of the proofs of several;—for one organ being proved, the fundamental principles of phrenology are established; and these being established, the details will readily make their way to the convictions of men. In doing this, I shall make a free use of phrenological writings.

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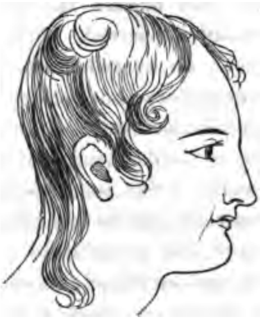
* *On the Functions of the cerebellum, by Drs. Gall, Vimont, and Broussais, translated from the French, by* GEORGE COMBE, *with additional cases by the translator.* Published 1838, by Maclachlan and Stewart, Edinburgh; Longman and Co., and Simpkin Marshall and Co., London; and Marsh, Capen and Lyon, Boston.

LOVE OF YOUNG.

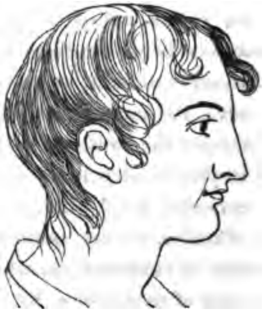
(The organ of this faculty was established by upwards of three thousand observations.)

Fig: 1:



Love of Young, small.

Fig. 2.



Love of Young, large.

Location of the organ of the Love of Young.

Let the reader feel along the middle line, at the back part of the head, towards the base of the skull, and he will recognize a small bony projection; below this point lies the organ of amativeness; immediately above it, and on each side of the middle line of the head, lies the organ of the love of young, forming, generally, a single protuberance occupying both sides of the line. When predominant, as in the second of these figures, it gives to the posterior part of the head a drooping, overhanging, appearance. To the anatomist, I may remark, that this organ lies on each side the falx cerebri, and rests on the tentorium.

Discovery of the organ of the Love of Young.

Dr. Gall observed, that in females the upper part of the occipital bone receded more than in males, and naturally inferred, that the brain beneath this part was the *probable* *seat of some quality which is stronger in woman than in man.* The question then arose, of *what* quality is it the seat? For five years he kept the subject continually in mind, adopting various opinions, all of which, he saw reason to discard.

At length he noticed, that the crania of monkeys, in this particular part, bear a striking resemblance to those of women, and he inferred that *the cerebral part lying under this prominence, was the probable organ of a quality, which women and these animals equally possess in a high degree.*

He held the more tenaciously to this idea, because, from the organs he had before discovered, he felt sure that this region was not the seat of any superior intellectual or moral faculty. He often pondered on the qualities which he knew the monkey tribe to possess, and, at length, in a happy moment, during the delivery of a lecture, as he recollected the extreme love of young, which is so characteristic of these animals, the thought flashed upon his mind, that this might be the long sought quality. He hastily begged his class to retire, hurried to his cabinet, commenced to examine and compare all the skulls he possessed, and found the same difference to exist between male and female skulls in general. The idea which had struck him appeared the more plausible, from the close proximity of this organ to that of the instinct of propagation. All subsequent observations confirmed its correctness.

The Love of Young exists throughout the animal kingdom to a greater or less extent.

We can hardly turn our attention to any part of the animal kingdom, without being greeted with the manifestations of this delightful feeling. Insects, fishes, and the amphibious animals, seek to deposit their eggs in a place of safety, whence the young may obtain ready egress, and be able to find food. The savage crocodile cautiously steals forth, and deposits her eggs in the sloping sand bank, where the sun's rays can have full power, carefully trying to cover them in such way as to prevent their discovery. Certain spiders carry their eggs in a little sack on their back, which they never part with except on the most pressing emergency. The cricket forms winding passages to its nursery, and keeps sentry around it. If an ant hill be destroyed, with what earnestness the little inhabitants collect the eggs and larvæ, and deposit them in a place of safety! The wasps and bees may at other times be approached without exciting their anger, but in the season of their young they become dangerous. With what activity they nourish the infant bees, with what fondness they lick and caress them, with what courage they defend them! Then with what perseverance do the birds cover and hatch their eggs, with what assiduity do they feed and protect their young, what alarm they manifest when their brood is threatened. They cling to their little ones despite hunger and cold, and are sometimes found dead, having in vain attempted to screen them from inclement weather. The cuckoo is often quoted as destitute of this feeling; but, inasmuch as she carefully deposits her eggs in the nest of some bird which will hatch them, and supply the infant brood with worms, she evidently possesses it, though in an inferior degree.

In the mammalia, the love of young, is the most active and imperious of the instincts. When the fox, cat, or squirrel has the least suspicion that its habitation is discovered, it immediately removes its offspring to another asylum However cautious the fox may ordinarily be, it becomes rash and dauntless when it has whelps to succour. When their young are in danger, beasts of prey become truly terrific; and even the hind and female roebuck forget that they are unarmed, and rashly precipitate themselves on the enemy, when their fawns are in peril. Monkeys are so fond of the young, that they bestow their caresses on children even, who may be so unfortunate as to fall in their way. The strength of this feeling in the human species, need not be told. It cannot be denied, then, that love of young is an innate propensity.

The strength of the Love of Young is greater, and the organ larger, in females than in males

In many species of animals, the male takes very little interest in the young; this is the case with the bull, horse, stag, wild boar, and dog, all the females of which, are extremely attached to their young; there have been dogs and horses however, which have sought the young with solicitude, protected them with tenderness, and defended them with courage.

Among those animals which live in the marriage state, or remain faithfully attached during life, as the fox, wolf, martin, and polecat; and among most birds, both sexes take great care of the young, still parental love is most conspicuous in the female; in imminent danger the father more often escapes than the mother, though, in ordinary circumstances, this is reversed.

Mankind love their young, and take charge of them with common accord, but yet, the love of offspring is much more intense in the female, than in the male, and this difference is manifested from the earliest infancy. The boy wants his whip, horse, drum, or sword; but, observe the little girl, occupied with her doll, she decks it in fine clothes, prepares for it night linen, puts it into the cradle, rocks it, takes it up, caresses it, feeds it, teaches it, scolds it, threatens it, and tells it stories. When she grows older she takes charge of her younger brothers and sisters, nothing possesses in her estimation, greater charms than babies.—And, when grown to maturity, and become herself a mother, with what sweet emotion and gushing tenderness does she caress her little ones. Well might Gall say, "If I had a city, there should arise in its midst, as an emblem of domestic happiness, a mother nursing her infant."

A most interesting practical example, of the difference in this feeling betwixt males and females, is quoted by Mr. Combe, from Morier's Travels in Persia. "The surgeons of the Embassy," says he, "endeavoured to introduce vaccination among the Persians, and their efforts at first, were very successful; but, on a sudden, its progress was checked by the government itself. Several of the King's Ferashes, were placed at the gate of the Ambassador's hotel, nominally as a mark of attention to his excellency, but really to stop all women from going to our surgeons. They said, that if the people wanted their children to be vaccinated, the *fathers* and not the *mothers* were to take them to the surgeons, by which means the eagerness for vaccination was stopped; for, we soon discovered, that the *males* did not feel *one half the same anxiety* for their offspring, as the women."—*Second Journey through Persia*, p. 191.

We find, in short, in all species of animals, that love of young predominates in the female, and, in exact accordance with this, Gall found that in the skulls of birds, from the smallest to the largest, and in the skulls of the mammiferous animals, from the shrewmouse to the elephant, the *part before described is more developed in the female than in the male.* The plates of Gall and Vimont, well illustrate this fact and any one may be convinced of it by observation. The organ of amativeness, situated in the cerebellum, is greater in the male than in the female; that of the Love of young, is greater in the female than in the male, and by the *difference in these organs alone*, Gall could tell, when a brain was presented to him in water, whether it were that of a male or female. The difference in form, in man, is manifest, in the fœtal cranium. The skulls of women are, by this difference of developement, readily known from those of men.

The Love of Young varies in intensity in animals of the same species, and the same sex, and the organ differs accordingly.

Many domestic animals kill and devour their young, though, generally, they are greatly attached to them. Many cows will not suffer themselves to be suckled by their calves; others, if separated from them, low piteously and refuse to eat for several days. The king of quails sits so assiduously, that it is often beheaded by the reaper's sickle. When the building in which there is a stork's nest takes fire, the parents often precipitate themselves into the flames, rather than abandon their young. Some mares have such a passion for colts, that they lead away those of other mares, and tend them with jealous tenderness. There is not a single farmer's wife, who does not know that individual differences exist in this particular, and who cannot point out, in the farmyard, those hens, turkeys, ducks, and geese, that cover their eggs, and tend their young assiduously, from those which destroy their nests or neglect and abandon their young.

The same difference exists in the human species. Some men are passionately fond of children; this was the case with Burns, in whom this organ was greatly developed, (see outline.) Agesilaus, the warlike king of Sparta, used to ride on a stick to amuse his children. And Henry the IV, of France, was caught on all fours galloping round the room, with one child on his back, and another flogging him with a whip. On the other hand, some women show marked dislike to children, they look upon them as visitations. We see some mothers give up their children

with indifference to mercenary hands, while some adopt the children of others, and bestow upon them the most tender cares.

"I knew a lady at Vienna," says Gall, "who loved her husband tenderly, who managed the affairs of her household with intelligent activity, but, who sent from home immediately after birth, all the nine children of which she was successively delivered, and for years she never desired to see them. She was herself astonished at this indifference, and could not account for it. In order to acquit her conscience, she required that her husband should daily see her children, and attend to their education."—Vol. 3, p. 282.

"Dr. Gall," says Mr. Combe, "knew instances of ladies who never felt any interest whatever in their children. I found it difficult to realize this fact, till I met with a case precisely similar. A lady of Edinburgh sent all her children from home to be reared and educated, and never wished to see them till they were grown, when she treated them not as though she regarded them as her children, but as friends and companions. I was not sufficiently acquainted with this lady to examine her head, but a lady of my acquaintance, who was an excellent phrenologist, did so, and found the organ to be remarkably small. The head, like this of a Peruvian, appeared to be truncated in the posterior region."

We daily see domestics very fond of children, and others who cannot abide them. We see some who abhor even their good humoured prattle, others who show towards them the utmost forbearance, and sooth their fretfulness with admirable patience and gentleness.

Now, in all these cases, the ***strong manifestation of the feeling*** is accompanied by a ***large development of the organ***, and a *feeble manifestation* of the faculty, by a *small development* of the organ, the manifestation and development being proportional.

Proofs drawn from the cerebral conformation of infanticides, that the portion of brain before indicated, is the organ of the LOVE OF YOUNG.

Drs. Gall and Spurzheim examined the heads of twenty-nine women guilty of child murder, and in twenty-five this organ was *very feebly* developed.—*Gall's Works, Boston edition*, Vol. 1. p. 293.

One of the twenty-five cases, I here present as an example. The account will be found in the description of Gall's visits to the prisons of Berlin, and Spandau, published in Nos. 97 and 98 of the Freymüthige, May, 1805, and transcribed into Gall's Works, Vol. VI. p. 301.

Dr. Gall drew attention to the large organ of destructiveness, and the absolutely flattened region of the love of offspring, in a woman named Rêgine Dæring. This woman had had several children, of which she had always secretly got rid. She was sentenced to imprisonment for life, yet she showed no repentance, nor remorse, but entered the room, to be examined by Gall, with a serene and assured air

The feebleness of child-love could never be the cause of infanticide ; but, when the organ is energetic, it has a most powerful restraining tendency. In four cases out of the twenty-nine above mentioned, the organ was full or large. I will relate one of these also, as it subjected phrenology to what may be fairly called an *experimentum crucis.* The account appeared in the *Journal du Beau Monde, Aug.* 1, 1805 : Leipsic.

Among a number of criminals detained in the prison of Torgau, who were brought to Dr. Gall, a woman was presented, who, deaf to the cries of her infant, aged four years, had drowned him in a river. Dr. Gall examined her; then he took the hand of M. Soder, counsellor at Halle, who happened to be there, and passed it over the back and sides of the woman's head, in order to prepare him for some farther observations. The prisoner having retired, Dr. Gall explained to a crowd of persons, who accompanied him, that he had discovered a circumstance very unusual in these cases; namely, that the prisoner *had the organ of maternal love very greatly developed*; that the *organ of destruction was very little so*; that otherwise, she was *very well organized*, and must have great faculty for learning by heart. The magistrates present, then related to Dr. Gall the following facts.

"This person, born of poor parents, whom she lost at an early period, had received hardly any education, when grown up she went to service in the country, and received the best certificates from her masters. Unhappily she was seduced, became pregnant, and the being to which she thus gave life, was the cause of her misery. She was dismissed from her employers, and no one would receive her, she knew not how to maintain herself and her unfortunate infant, which she continued to cherish with the utmost tenderness. At length, a poor villager and his wife, took pity on her lot, received the child into their house, and kept charge of it for three years. The mother again found employment and behaved very well.

"The child grew up, and gave great satisfaction to his protector, who loved him with the tenderness of a son, and was repaid with equal warmth. This was enough to set idle tongues busy. A rumour spread that the villager was the father of the child. The good man, conscious of innocence, despised these calumnies; but, his wife was differently affected by them. Hence, resulted altercations so frequent and so disagreeable, that the villager, to obtain peace, sent back the child to its unhappy mother. In vain did she supplicate her employers; in vain represent that she had served them with exemplary assiduity and fidelity; she saw herself, on account of this child, again houseless in the severest season of the year. All the other rich people treated her with the same harshness, she met with no other poor and hospitable villager. She wandered from place to place, selling her garments to satisfy her hunger and that of her child, finding no where either refuge or succour. The child was wasting away; overcome and enfeebled by hunger and pain, she implored death for this miserable being and herself, as the only relief to their sufferings. In this struggle, between maternal love for her child, who was almost dying with hunger and cold, and the conviction that its destruction was the only means of saving herself; hopeless of compassion from mankind, in a moment of delirium, she seized the wretched child, and dropped him into the river, where death soon relieved his sorrows. Exhausted by weakness, the mother fainted, and was found in this state; on recovery, she immediately accused herself of the crime, and was arrested. She was condemned to be beheaded, but, on account of the attending circumstances, her punishment was commuted for imprisonment during life. In prison she behaved with great attention, gentleness, and docility. She learned to read with extraordinary facility, and she seizes with readiness whatever is taught her."

In this case, the crime led Gall to expect *small love of offspring* and *large destructiveness;* he found the reverse, but confiding in the truth of his doctrines, he fearlessly announced the seeming contradiction. How well the recital of the magistrates justified his confidence!

Proofs drawn from a state of disease, in favour of the proposition that the portion of the brain before described, is the organ on which the manifestation of the LOVE OF YOUNG *depends.*

CASE I.

In the great hospital of Vienna, there was a woman who had a singular delirium. She believed herself to be pregnant with six children. Gall was told of this, and attributed it partly to extraordinary development of the organ of love of offspring, and partly to its over excitement. The woman died. The skull was sent to Gall, who found this part so very voluminous, that M. Rudolphi, the celebrated physiologist, attempted to account for the protuberance, by some supposed pressure.—*Gall's Works*, Vol. III. p. 285.

CASE II.

At Paris, Gall professionally attended, for a mental disease, a very amiable and modest young lady, who, afterwards accompanied some friends to Vienna. She had hardly arrived there, before she visited all her acquaintance, and informed them with the most lively joy, that she was pregnant. This declaration, taken in connection with her known character, convinced her friends that she was insane. Her immoderate joy soon gave place to violent anguish, and an invincible and melancholy taciturnity. Shortly after this she died a victim to consumption. Here, again, the organ of the *love of offspring was extremely developed*, and, during life, this lady had singularly loved children.—*Gall's Works*, Vol. III. p. 286.

CASE III.

Gall saw in the insane hospital of Amsterdam, a lady who incessantly talked like the last mentioned one. Her head was small. The organ of the love of offspring being alone very much developed.—*Gall's Works*, Vol. III. p. 287.

CASE IV.

A man in an insane hospital maintained that he was about to be delivered of twins. Gall declared that he must have the organ in question *very much developed.* An examination proved it to be so.—*Gall's Works*, Vol. III. p. 286.

CASE V.

"I have seen," says Spurzheim, "several insane women, who fancied themselves with child, and they had the *respective organ elevated.*"—*On Insanity: Boston*, p. 108.

CASE VI.

"I saw, April 1836, a woman in a Lunatic Asylum," says Mr. Combe, "who thought her children stolen. She fell on her knees to the superintendent, screaming with agony, and imploring that they might be restored, with a depth of wo, which I could never have conceived it possible to express. In her head the organ was very large."

CASE VII.

"I attended some time ago," says Dr. Combe, "the mother of a family, in a state of delirium, characterized by intense anxiety and alarm about the supposed murder of her children, and who, on being asked, after her recovery, what were her sensations during the paroxysm, *applied her hand to the region of the organ of philoprogenitiveness*, and said, that she was conscious of nothing except severe pain in that part of the head. She was unacquainted with phrenology, and never had heard the subject mentioned by me, so that her statement was perfectly unbiassed."—*On Mental Derangement: Boston ed. p.* 156.

Many other cases are on record, in which love of offspring has been deranged, but, as the development of the organ is not mentioned, they only so far bear upon the present subject, as to show that this feeling may be singly or chiefly affected. Pinel mentions a mother who had been distinguished for great attachment to her family, and whom domestic troubles had thrown into profound melancholy. She regarded the food that was offered to her, as the portion of her children, and rejected it with indignation.—*On Mental Alienation, second ed.* p. 296.

A native of the South Sea Islands, having had a child taken from her to make a sacrifice to a barbarous idol, went mad, and in consequence, becoming very troublesome, her countrymen killed her.—*Burrow's Commentaries*, p. 22.

Proof that the portion of brain before described, is the organ of the Love of Young, drawn from its growth under excitement.

It is known, and admitted, by all physiologists, that even after persons have arrived at adult age, the different parts of the body often become enlarged by well regulated exercise; the same occasionally happens in different parts of the brain—thus, Napoleon's head much enlarged in certain directions after he first entered the army. Broussais, the great French physiologist states, that, within two or three years that he was engaged in deep reflection, and argumentative study, his organ of causality so much increased that the difference was perceptible by measurement. Mr. Kirtleyrecords a case in which the attention of a mother was concentrated on her children for a length of time, on account of their sickness, till she began to feel an interest in them never before experienced. This excitement of the love of offspring, was, necessarily, accompanied by increased vascular action in the corresponding organ, and this resulted *in the permanently increased development* of the part before designated.—*See Edinburgh Phrenological Journal*, Vol. X. No. 51.

Here we might rest the case, but, as objections have been made, let us briefly notice them.

Objection. A mother's love for her offspring is the result of reason.

Answer. "Reason only investigates causes and effects, and decides on a comparison of facts. The mother, while she smiles with ineffable joy on her tender offspring, does not argue herself into the delightful emotion. The excitement is instantaneous; the object requires only to be presented to her eye or imagination, and the whole impetus of parental love stirs the mind. Hence a feeling or propensity is obviously the basis of the affection."—(*Combe.*) Besides, it "often acts in opposition to reason in spoiling children."—(*Spurzheim.*) And we find it in full energy among the most intellectual of mankind, and the most ferocious brutes.

Objection. Love of offspring arises from kindness and benevolence of disposition.

Answer. Were this the case, no selfish person should be fond of children; but, persons noted for ferocity and bloodthirstiness, are often strongly attached to their offspring. The Charibs, the most unfavourably organized of human beings, and whom all travellers represent as totally unregulated either by intellect or benevolence, have this feeling decidedly strong, and the organ is as decidedly developed. This the accompanying figure will show.

Captain Parry says that love of offspring is almost the only amiable feeling that the Esquimaux Indians possess, but that they possess it in a remarkable degree. He met and relieved a party of them, who were without food and almost dying with hun-

ger; the first thing they did was to feed their children, neglecting themselves till they were fully satisfied. In them the organ is greatly developed (*see outline*). Again, this feeling is not less strong in the eagle, or tiger, than in the most gentle and docile of animals.

Objection. The love of offspring is proportionate to the feeling of amativeness.

Answer. Amativeness is strongest in males, whereas the love of offspring is the strongest in females.

Objection. The love of offspring is the mere result of instinct.

Answer. It may be admitted that love of offspring is an instinct, but then it does not the less require to be manifested through a distinct cerebral organ.

Objection. "A mother does not love her infant, because she has a protuberance, but because it makes, or has made, a part of her happiness."—*Journal of the Empire, and Dictionary of Medical Sciences*, Vol. XXI. p. 210.

Answer. Children make a part of her happiness, because her organization fits her to receive pleasure from them. The proper activity of an organ being always pleasurable·

Objection. "A mother loves her child from the pains it has cost her, and the dangers she has been exposed to on its account."—*Journal of the Empire.*

Answer. Like causes produce like effects. And for the same reason, she should love a dog because it had bitten her, a bee because it had stung her, or a horse because, by its vicious turbulence, it had endangered her life.

Objection. But, we find mothers who love one of their children, much more than the others; how can this be explained on the supposition of love of offspring depending on a blind impulsion?

Answer. Phrenologists always take the whole organization into consideration. A mother will naturally love that child most, which is most pleasing to her other faculties. Independent, of this, however, Mr. Scott, Mr. Combe, and other phrenologists have remarked, that the direction of the feeling bears a reference to the weakness or helplessness of its objects, that "the mother doats with the fondest delight on the infant in the first months of its existence, and her solicitude and affection are bestowed longest, and most intensely, on the feeblest member of her family."

Objection. Love of offspring is manifestly a modification of self-love.

Answer. Then should parental affection be weak, in proportion as generosity is strong; and strong, in proportion as generosity is weak; which is evidently not the case.

We have now shown that the organ of the love of young is always present, and that the corresponding feeling is always present; that the organ is largest in females, and that the feeling is strongest in females; that the size of the organ varies in animals of the same species and sex, and that the strength of the feeling varies correspondingly; that when the manifestation of the feeling is disordered, pain is felt in the organ; that where hallucination of the feeling exists, the organ is generally very large; that in child murderers, it is generally very small; that when the feeling has been called into long continued manifestation, the organ has increased in size; that such is the intimate correspondence between manifestation and development, that where one is known, the other may be inferred. Here we close our case, deeming the evidence adduced more than sufficient to establish our position.

We now say to the antiphrenologist, there is, there can be no way to avoid our conclusions, except by showing that we have borne false witness, and to attempt this, you will have to question nature, who, if questioned, will, we know full well, confirm the truth of our testimony.

Until you have so questioned nature, maintain not tha we are false, because you are ignorant; that light exists not, because you refuse to see. The King of Siam, accused the Dutch traveller of falsehood, for affirming, that, in

Holland, water sometimes becomes solid. You accuse us of falsehood, for maintaining that the mental faculties are manifested through distinct cerebral organs, the power of which may be proximately estimated from cerebral development. You blame the King of Siam for injustice—though the congelation of water was entirely at variance with his experience, and beyond the range of his observation—yet denounce us, though our proofs are numerous as the heads of men!

To the sincere seeker after truth, we would earnestly recommend observation. Do not, we pray you, sit down to *argue* against *facts* when you may so readily observe. Such a course is as useless as it is absurd. The organ which has been described, is one of the most easily distinguishable. Compare then, with reference to this point, the heads of your male and female acquaintance, especially the heads of such as manifest the feeling strongly, and such as manifest it weakly. Compare the skulls of males and females in anatomical collections, and the skulls of animals of various species, and of both sexes. Do this candidly, nay, with prejudice if you please, so that you do it carefully, and our word for it, the sneer and shrug of pedantry, or self-conceit, the denunciations of bigotry, and the forebodings of weakness and superstition will never be able to uproot the conviction from your mind, that phrenology is true: and being true, is it not of God, the fountain of all truth? Having satisfied yourself of one fact, proceed cautiously but perseveringly, and human nature will gradually unfold itself to your mental vision, in all its beautiful simplicity; your views of man will be enlarged, of providence corrected, and of the great moral teachings of Christianity demonstrably confirmed.

It appears to me that the "*In medio tutissimus ibis*," or middle course principle, has been much more lauded than it deserves. A middle course! where is there such a course? To a greater or less extent, whatever is not right is wrong—whatever is not just is unjust—whatever is not honourable is dishonourable—whatever is not temperate is intemperate—whatever is not true is false. Now, the path of right, of justice, of honour, of temperance, of truth, is not a middle, but the narrow and only path of true philosophy and virtue. *In medio tutissimus ibis* is gently syllabled forth, and individual heroism becomes withered. And to take a firm stand for some broad and momentous, but unpopular principle, urge its importance, and attempt its promulgation, is considered sufficient proof of hallucination. The absurdity of the "middle course" men, is finely illustrated by their expressions concerning phrenology; you hear them remarking every day, "The general principles are no doubt true, but the details are ridiculously absurd." Now, as a general truth is merely a truth common to many individuals, if the details be false, the general principle must be so too. It is as impossible that any accumulation of falsities should constitute a truth, as that the simultaneous infliction of various torments should harmonize into exquisite delight.

It may be truly said, that the light of every natural truth exists at all times in the atmosphere of mind; but, as the natural light seems not to exist till the eye receives it, so the light of truth seems a nonentity, till it meets with some human mind, which has a correspondence with itself. It exists from creation's dawn, but not till then does it become known. From this mind it shines forth as from a sun; and as natural light is affected by the body on which it falls, and the medium through which it passes, so as the light of truth radiates to other minds, it becomes brightened, dimmed, or darkened. Thus, the truths of phrenology had ever existed, but had never been clearly recognized till the coming of Gall. In him they found the fittest medium perhaps, that ever was; he gave himself to their reception with singleness of heart, and to their transmission with unparalleled ardour. His light radiated to Spurzheim and

Combe, and became increased and purified; to Cuvier, and it became dimmed; to Gordon, and it became a baleful and affrighting glare. Blessed is he who receives the light, and transmits it purified to his neighbour. But awful is the conduct of him, who turns the light of truth to the darkness of error, prejudice and superstition; who, being made a recipient of good, becomes a transmitter of evil.

Is IT TRUE? is the only rational question on any scientific proposition; and the answer must be either in the affirmative or negative. Suppose a proposition to be false, to decide that it is so without investigation, is childish and presumptuous. The really laudable thing is *the search*, and the *impartial manner* of conducting it. But how rare this attention and impartiality! That the world is slow to practice goodness, all allow, it is almost equally backward to receive light. Every individual seems to concentrate his thoughts, and limit his view, to a certain sphere. Some spheres are greater, indeed, than others, but it is true of almost every man, that if you try to draw his attention to something beyond his particular sphere, he is roused to passion, by what he is pleased to deem impertinent interference. Men, like dogs, seem each to have a bone to which they are paying exclusive attention. Try to withdraw that attention, and you are rewarded by a snap and a snarl. And as in the case of the dog, so in that of man, the scraggiest bone is generally the most fiercely clung to, and the most vigorously defended.

Let it not be supposed that we admire men in proportion to their facility of belief, we hold credulity in low estimation. Let it not be supposed that we admire those who pass from a first, or second lecture, stoutly declaring themselves to be phrenologists. It would be as modest to declare themselves astronomers, because they had learned that there is only an apparent, not a real, daily revolution of the sun round the earth; or, to declare themselves geometricians, because they had learned that "two lines which are parallel to a third, are parallel to each other." What we do admire, is a mind imbued with the love of truth and goodness. What we ask for, is rigid scrutiny, candid investigation, and that men will not decide against us before examining evidence. Grant this, and we fear not the result—for, whoever examines, believes. This is confirmed by the whole history of phrenology, and, with a single instance, in illustration, I close the present essay.

In 1818, the Royal Institute of France offered a prize, to the author of the best memoir on the anatomy of the brain, in the four classes of the vertebral animals. Attracted by this, Dr. Vimont, of Caen, commenced researches without reference to phrenology; indeed, he had not read Gall, and had only heard of him as a charlatan. However, as Gall had written upon the subject of his researches, he thought it incumbent on him to read his work among others. "Hardly," says he, "had I begun to read it, when I found that I had to do with one of those extraordinary men, whom dark envy endeavours to exclude from the rank to which their genius calls them, and against whom it employs the arms of the coward and the hypocrite. High cerebral capacity, profound penetration, good sense, varied information, were the qualities which struck me as distinguishing Gall. The indifference which I first felt for his writings, soon gave way to the most profound veneration." —*Introduction*, p. 14.

Vimont commenced investigations into the phrenology of brutes, and continued them with extraordinary perseverance. In 1827, he presented to the Institute, a memoir containing a fragment of the researches on which he had spent so many years, together with two thousand five hundred heads of brutes of various classes, orders, genera, and species. Among these, fifteen hundred had belonged to brutes, with whose habits, he had been individually well acquainted before they died or were killed. He presented four hundred wax representations of the brain, modelled after nature, and an atlas of more than three hundred figures of the brain and cranium, having expended upwards of twelve thousand francs in procuring specimens. The work in which he now sets forth his observations, is illustrated by an atlas of one hundred and twenty plates, containing *six hundred figures.* I have seen an inferior edition, published at Brussels, but not the work itself. The plates are said to be exquisite, and to surpass, in accuracy of dimensions, any thing before attempted in anatomy. Dr. Elliotson remarks, that "if the immense mass of proofs of phrenology from the human head, and the facts pointed out by Gall, in brutes, are not sufficient to convince the most prejudiced, the additional multitude amassed by Dr. Vimont will overwhelm them."*

I have now shown briefly, the aberrations of the human understanding, and the darkness in which it became involved, previous to the recognition of the Baconian, as the only true method of investigation. I have briefly endeavoured to illustrate that method, its vast utility and importance; and to prove, that by the rigid application of its rules, the principles of phrenology have been elaborated from nature. I have shown that, in doing this, there has been no mere conjectures, no anticipation of facts, no castle-building, nor hypothecation. But that phrenologists have proceeded in exact accordance with the order of the intellectual faculties. Like the bee, which, as Lord Bacon observes, first gathers matter from the fields and gardens, and then digests it and prepares it for use by its own native powers, they have laboriously and carefully gathered facts from a vast field of observation; these they have rigidly compared and classified, have noticed their multifarious relationships, and detected the dependence of mental faculties for manifestation on certain recognizable material organs and conditions, which they have described and explained. In doing this, I have proceeded, somewhat at length, through the proofs on which we rest our belief in the existence of an organ, by, and through which, alone, love of young is manifested.—Proofs sufficiently strong, if joined with the necessary personal investigation, to sweep away all doubt, and overwhelm all opposition. I have, finally, endeavoured to illustrate the folly and presumption of those who decide without evidence, and erect themselves into oracles. And to impress upon all, that it is the duty of man to listen eagerly for the voice of truth, and whether it be heard in an appeal from without, or be heard, like the "still small voice" of conscience, arising in the hour of thoughtful meditation, from the depths of the soul, that whenever, wherever, however, it be heard, for him it is to follow its dictates with assurance of unerring guidance.

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* Elliotson's Physiology, 5th ed. p. 406.

SKETCH

OF THE RISE, PROGRESS, AND PRESENT CONDITION, OF PHRENOLOGY.

On no subject has there been a greater diversity of opinion, than on the functions of the brain. It has been regarded as a sponge, attracting to itself the humidity of the body; as a cold, humid mass, destined to temper the heat of the heart; as a mere excresence of the spinal marrow; as a prolongation of the blood vessels; as a collection of confused intestines; as a gland secreting an impure fluid; and even Bichat saw in it nothing more than an envelope, destined to secure the parts on the internal base of the brain!*

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* See Gall. Vol. ii.; Introduction.

From the earliest recorded time however, there have been those whose views more nearly approximated to truth. Though these views can be considered merely as fortunate conjectures, mixed up with gross absurdities.

It is remarkable, as Ehrenberg observes,* that 500 years before the Christian era, (and no historical record ascends higher,) Pythagoras, to whom the existence of nerves was unknown, should maintain that the brain is the chief seat of the soul, and the seat of the intellect.† In the treatise on Epilepsy, erroneously ascribed to Hippocrates, it is asserted that by the brain we think and perceive, see and hear, and distinguish the base from the honourable, and the bad from the good, adding that its disorder produces frightful dreams, panic terrors, and even mental derangement.‡

We find that the multiplex character of the brain has had its advocates. St. Gregory compared the brain to a city with many gates and a number of streets. *Nemesius* taught that sensation has its seat in the *anterior*, memory in the *middle*, and understanding in the *posterior* ventricles. *Albertus Magnus*, in the thirteenth century, delineated a head on which he indicated the fancied seats of the different mental powers. *Peter de Montagnana*, and *John Rohan de Retham*, in 1491 and 1500, published others. *Bernard Gordon*, and *Lodovico Dolci*, a Venetian, published similar delineations. Servito, Willis, Bonnet, Boerhave, Haller, and Prochaska maintained the doctrine of plurality of organs in the brain.

Again, an obscure notion that some degree of correspondence, exists between the size of the head and the mental character, has existed for ages. The ancient sculptors represented their highly intellectual men and gods with *large* heads, and their mere fighting men, and unintellectual deities with *small* ones. This was doubtless the result of observing that large size is most frequently the accompaniment of intellectual and moral greatness. Thus they had to represent Pericles as wearing a helmet to hide the extraordinary size of his head, and Plutarch relates of him that he might be seen sitting in the street fatigued by its enormous weight; at other times, remarks the biographer, thunder and lightning issued from this monstrous head with a tremendous noise. Compare the head of Bacchus with that of Jupiter, the one with a relatively small head, the other with an enormous one. Compare the head of Venus with that of Minerva, great difference exists.

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* On the structure of the nervous system; sec. 1.

† Diogenes Laert. viii; 30.

‡ Dr. Craigie.

But the *form* of the head has also been recognized as bearing a relation to the mental character. It is remarkable, observes Dr. Elliotson,* that Aristotle in his Physiognomy, though he gives a number of ridiculous signs of character from the face and numerous parts of the body, gives three only from the cranium, but those three are in strict accordance with Phrenology. "Those who have a large head are sagacious, are like dogs;† those who have a small head are stupid, are like asses; those who have a conical head have no shame, are like birds with curved claws.

It is no less remarkable, that one of each of these points is spoken of, by each of the three greatest poets:

> "His fair *large front* and eye sublime declare
> Absolute rule."—*Milton's Paradise Lost*, b. iv.

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* Hum. Phys. 5 ed. 370.

† Yet Dr. Sewell says, "While Aristotle regarded the brain as *multiplex*, he considered a small head as the standard of perfection.'—(*Exam. of Phrenology*, p. 121.) On this Dr. Caldwell remarks, "I do not believe that Aristotle has pronounced a small head an evidence of 'superior intellect,' because I have been unable to find the assertion in his *original* works—I mean his works in his *native tongue*. I have carefully looked through his philosophical writings for the sentiment in question, but looked in vain.—*Phrenology Vindicated*, p. 30.

"I will have none on't; we shall lose our time
And all be turned to barnacles or to apes
With foreheads *villanously low*—*Tempest*, Act iv. sc. 1.

Homer gives the basest fellow who went to Troy a conical head—a miserable development of the seat of the moral sentiments.

Compare the statue of the Gladiator with that of Jupiter, and you will find the one with a low, retreating forehead, thick neck and wide basilar region; the other with a forehead truly magnificent, piled up and spread out, a worthy ideal temple for the all comprehending intellect of the "father of Gods and the king of men."

"The nearest approach," says Mr. Combe, "to Gall's discovery which has come under my notice, is one that the opponents of phrenology have not referred to. It is contained in an inquiry into the influence of physical causes upon the moral faculty, delivered by Dr. Benjamin Rush, before a meeting of the American Philosophical Society, held at Philadelphia on the 27th of February, 1786. In this inquiry coming discoveries may be said to have cast their shadows before, and Dr. Rush, by observing and faithfully recording the phenomena of Nature, has brought to light several important truths, which have since been confirmed and elucidated by phrenology, in a manner that evinces, on his part, extraordinary depth and perspicacity of intellect, combined with the highest moral qualities."* In this essay Dr. Rush powerfully maintains, that over the manifestations of the mind, physical causes have a most important influence. Of the peculiar features of Phrenology, however, the distinctness of the cerebral organs, and the possibility of estimating their force by external developments, he takes no notice.

It appears to me, that no author had approached more nearly to the doctrines of Gall than Emanuel Swedenborg, the sincere, amiable, and highly moral and intellectual visionary of Sweden, who was born in 1689, and who died in 1772. Throughout his voluminous writings, allusions to the dependence of the mental faculties on material conditions continually occur. To enable the Phrenologist to judge of their value, I shall present some of them in a connected form.

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* An Inquiry, &c., with an introductory notice, by George Combe, Philadelphia, 1839.

Brain the organ of Mind.

"That the principles or beginnings of life are in the brains is manifest. 1. From sense itself, in that when a man applies his mind to any thing and thinks, he *perceives that he thinks in the brain*, he draws inwardly as it were, with his eyesight, and keeps his forehead intense, and perceives that there is inwardly a speculation, *chiefly within the forehead*, and somewhat above. * * * 4th. That *when the brain is hurt* either in the womb, or by a wound, or by disease, or by too great application, *thought is debilitated*, and sometimes the *mind is delirious*. 5th. That *all the external senses of the body*, which are the sight, hearing, smell, taste, together with the general sense, which is the feeling, as also the speech, are in the anterior part of the head, which is called the face, and *have immediate communication by fibres with the brain*, and derive thence their sensitive and active life."*

"It is there *(the brain)* also *whence come the thoughts*, which are of the understanding, *and the affections* which are of the will."†

"For the brain, *where the mind of man is*, hath respect to the ends of the body."‡

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* Divine Love and Divine Wisdom, Latin, Amsterdam, 1763. English, Boston, 1835. No. 362.

† Arcana Cœlestia. No. 4042.

‡ Idem. No. 4054, et passim.

"Every one skilled in anatomy may see, that round about the cerebrum, also within it, and in the cerebellum, and in the spinal marrow, there are little spheres like dots, called the cortical and cineritions substances and glands, and that all the fibres whatsoever in the brains, and all the nerves derived from them throughout the body, come forth and proceed from those little spheres or substances. * * * The eye does not see from itself, but by what is continuous from the understanding, for the understanding sees by the eye, and also moves by the eye, determines it to the objects, and gives intensity to sight. * * * In like manner the muscles, these not being moved of themselves, but from the will together with the understanding, which actuate them at their own disposal; from which considerations, it is evident, that there is not any thing in the body which feels and is moved of itself, *but from its origins, in which reside the understanding and will*, consequently, which are in man the receptacles of love and wisdom, whilst the organs both of sense and motion, are forms derived from them.*"

Influence of the Brain on Mental Operations.

Many suppose that the perceptions and cogitations of the mind, (as being spiritual things,) present themselves to us naked and destitute of all organized forms; but this is owing to their ignorance of the formation and offices of the brain, with the various intertextures and convolutions in its cineritions and medullary substances, its different glands, sinews and partitions, and numberless imperceptible fibrillæ, and these invested with its meninges and matres, (dura and pia,) all which afford infinite materials and receptacles to the mind for the configuration of ideas. Now *upon the good condition of these parts depends the soundness of the* intellectual *operations, and the regular determination of the will* in this our natural state, so that a man is deemed *rational or moral* in *proportion* to the *right organization* of the *mental forms;* for *the rational sight of man, which is the understanding can no more be said to exist here in this outward world without organs properly adopted to the reception of spiritual light, than the bodily sight to exist without eyes.*"*

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* Divine Love and Divine Wisdom, p. 66. See also Universal Theology, No. 351, and Arcana Cœlestia, No. 4040.

Distinct Faculties of the Mind have distinct Organs of the Brain, and Mental activity affects the form of the Skull.

"Every man that is born has a disposition to all sorts of evil, which must be checked by education, and as far as possible, rooted out. This is first to be attempted by correction and punishment, then by good society and example, which leads to imitation; and at last, good is secured upon a true and reasonable religious root. When these conditions are all observed, it is indicated by the *beautiful skull* of the individual. On the contrary, should the education be neglected, or no sudden misfortune, or opposition, hinder the first outbreakings of evil, or disorder, the evil afterwards becomes habit, and produces peculiar wishes, both in design and practice, which *cause the formation of a badly shaped skull.* The cause of the difference of skulls, in such cases, is this: The peculiar distinctions of man, will and understanding, have their seats in the brain, which is excited by the fleeting desires of the will, and the ideas of the intellect. Near the *various spots* where these irritations produce their effects, *this or that part* of the brain is called into a greater or less degree of activity, and forms along with itself corresponding parts of the skull."†

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* Treatise on the nature of influx, by E. S. Boston, 1794, p. 72.

† I have not met with this passage in Swedenborg's writings, but it is quoted by Dr. Sewell in his Ex. of Phren., p. 12, from a memoir of Swedenborg, by Capt. Walden; Copenhagen, 1806.

On account of these things a few captious writers have endeavoured to lessen, if not destroy, the merit of Gall as a discoverer; an attempt of which that noble spirit now recks not, and which can have no effect on the truth or utility of Phrenology. Still we remind such objectors that Giordano Bruno had said "that it is by no means improbable that there are other planets revolving round our own sun, which we have not noticed, either on account of their minute size or remote distance," yet this detracts not from the merit of Herschel. Some had expressed confused notions concerning the circulation of the blood; yet we allow not this to tarnish the honours of Harvey. Bacon suggested that there may be some kind of magnetic influence operating by consent between the earth and heavy bodies, the moon and the waters of the sea, the starry heavens and the planets; yet we strip not Newton of his crown. Bacon had said that it seemed to him incredible that the rays of celestial bodies can instantaneously pass to us, and that he suspected that the stars are not seen by us in their true situations; yet we do not consider this as diminishing the merit of Dr. Bradley, the prover of the aberration of light. Bacon conjectured, that air might be converted into water by condensation; yet Biot's fame is not on this account lessened. A few farmers had long been acquainted with the efficacy of cow pox matter; yet this did not preclude Jenner from a parliamentary reward, and a world's gratitude. So others darkly guessed, at what Gall clearly proved. He was not content with guessing; he demonstrated, by laborious investigation and rigid induction. He travelled from city to city, teaching and extending his observations: he devoted to the task his property, his talents, his energies for many years, steadily pursuing his course amid laughter, mockery and vituperation. Columbus like, he lay not supinely on his back, vaguely conjecturing that beyond the vast and trackless ocean *might* lie some rich and undiscovered country. No; despite the "Gorgons, hydras, and chimeras dire," which seemed to beset his career; despite the storms of opposition, the threats and forebodings of bigotry and superstition, he kept his onward course, nor rested till the anxiously sought for land beamed upon his sight—till he had planted his standard on the new, but no longer unknown, world. Nobly did he win his laurels; be it our care that not a leaf be plucked from his brow.

Those physiologists who admitted the brain to be the organ of mind, were particularly anxious to find, by its general form, or by its relations to other parts, a measure for the intellectual faculties and the moral qualities. Of their attempts Gall gives a full account in the second volume of his work on the Functions of the Brain.

Aristotle, Galen, and others maintained that, of all animals, man had the most considerable mass of brain, and that this accounted for his superiority; but the brain of the elephant and that of the whale are heavier. The brain of a whale in the museum of Berlin weighed 5lbs. 5oz. 1dr.*

Cuvier and others have attempted to establish a relation between the amount of mental capacity, and the proportion of the brain to the rest of the body; but the sparrow, the robin, the wren, and several species of monkeys, have, in proportion to the body, a much larger brain than man.

Wrisberg and Sœmmering concluded that of all animals, man has the largest brain in proportion to the nerves in general; but if the monkey, the little sea dog, or many birds, be compared with him in this respect, the result will be in their favour.

Cuvier, Sœmmering and Ebel considered the relative proportion of the brain and spinal marrow as the most infallible measure of the intellectual faculties. But Cuvier himself admits that there are exceptions to this rule, and adduces the dolphin as an instance.

Others maintained that the proportion of the brain to the face indicates the mental capacity. Plato, and, after him, Bichat and Richerand, maintained that there is a proportion between the length of the neck and the vigour of intellect, the shortest neck being the most favourable. "Here," says Gall, "the authority of Plato proves but one thing, which is, that men who enjoy great reputation ought, above all others, to avoid throwing out ideas at random; for, however erroneous they may be, they will be repeated for centuries."

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* Müller's Physiology, London, 1838. p. 815.

In order to determine the cerebral mass, Camper drew a base line from the roots of the upper front teeth to the external opening of the ear; then another straight line from the upper front teeth to the most elevated point of the forehead: according to him the intellectual faculties of the man or animal, are in direct proportion to the magnitude of the angle, made by those two lines. Lavater, with this idea for a basis, constructed a scale of perfection from the frog to the Apollo Belvidere. Cuvier furnishes a list of men and animals in support of this doctrine. But the facial angle of the same individual differs immensely at different periods of life; and Blumenbach shows that nearly three fourths of the animals known, have the same facial angle.

Seeing then, that men were anxiously searching an indication of mental capacity, and that each of the fallacious methods above enumerated was received with favour, and was copied from book to book, and from periodical to periodical, the respective proposers receiving in every case an increase of celebrity, on account of their proposition, it would seem likely, *a priori*, that Gall's discoveries would have been received with acclamation and not have been strenuously, and, in many cases, ferociously opposed and denounced. Men, on this subject, were involved in darkness, and when a twilight glimmer, or ignius fatuus faintly twinkled on their searching eyes, they bent towards it with eager gaze, and hailed and blessed it as the harbinger of day; but when day itself beamed suddenly upon them, they closed their eyes and raved, and thus merely exchanged the darkness of midnight, for the darkness of excessive light.

The history of the reception of Gall's discoveries, and of the treatment which his works and those of his immediate followers met with, from the authorities in literature and science, will ever be an interesting chapter in the annals of human civilization. Men talk largely of the superior liberality of the present age, and justly perhaps. This superiority, however, appears to me to consist in the currency of a number of opinions formerly proscribed, but which have, from time to time, burst the barriers of prejudice and bigotry, rather than in an enlarged *spirit* of candour towards opposing doctrines. To prove our greater liberality, it is not sufficient to show that we receive as true, what our ancestors rejected as false. To ascertain the liberality of Harvey's age, we do not ask whether it believed the doctrines of Galileo, but how it received those of Harvey. To ascertain the liberality of Newton's age, we do not ask whether it believed the doctrines of Galileo and Harvey, but how it received those of Newton. So to ascertain the degree of liberality which now prevails, men, in after times, will not ask whether we accredited the doctrines of Galileo, Harvey and Newton, but how we received those of Gall. And I see not how the conclusion can be avoided, that towards that which is really new in kind, the present age is as intolerant as were past ages. The material rack and faggot are not, indeed, brought into requisition, because philosophers do not wield the power of the rack; because the conviction that such applications are utterly inefficacious, as suppressive measures, has forced itself, by long and horrible experience, on the minds of men. But when a profound genius, after years of anxious and unremitting investigation, during which energy would have sunk, but for the glowing and lofty hope of benefitting the human race, brings forward a momentous discovery; he is met with the dark scowl of insulted pride, and against him the shafts of ridicule, the rack of sarcasm, and the fires of rage and denunciation are brought into full play. He offers to his fellow men an inestimable boon, and they turn sneeringly away, asking what "the babbler" says, waiting not for a reply. Or they mock at him and denounce him, and strive to blast his good name. The violent cry out charlatan and scoundrel, while the pretenders to charity, in soft and silvery tones, beg that the poor unfortunate may be excused on account of his manifest insanity. The history of Gall's discoveries proves all this. Well was it that the great master and his immediate followers could gaze on calmly and forgivingly, repeating that ever memorable saying: "*This is* TRUTH *though at enmity with the philosophy of ages.*"

Gall, on the 9th of January 1802, was commanded, by the Austrian government, to discontinue his lectures on the functions of the brain; in consequence of which, he was forced either to cease his labours, or tear himself from friends, home, and a rich and extensive practice. He nobly chose the latter, and on March 6th, 1805, he left Vienna for ever, accompanied by his young associate Dr. Spurzheim.

I shall not dwell on the reception of the new doctrines by the Institute of France, and by the scientific men on the continent of Europe; but shall make a few extracts from British and American works, as demonstrative of the foregoing remarks.

"We look on the whole doctrines taught by these two peripatetics, (Gall and Spurzheim) anatomical, physiological and physiognomical, as a piece of *thorough quackery* from beginning to end." *Edin. Review. No.* 49.

"They (the doctrines of Gall and Spurzheim,) are a collection of mere *absurdities*, without truth, connexion, or consistency; an *incoherent rhapsody*, which nothing could have induced any man to have presented to the public, under a pretence of instructing them, but *absolute insanity, gross ignorance*, or the *most matchless arrogance.*" *Ibid.*

"Such is the *trash*, the *despicable trumpery.*" *Ibid.*

"The writings of Drs. Gall and Spurzheim have not added *one fact* to the stock of our anatomical knowledge." *Ibid.*

"Madame de Staël is by far too indulgent to such *ignorant* and *interested quacks* as the craniologist Gall." *Lon. Quar. Review.*

"A wild effusion of a bewildered imagination." *Dr. Roget, in the Encyclopedia Britannica.*

"*Fool* and *phrenologist* are terms as nearly synomymous as can be found in any language." *Blackwood's Mag.*

"These *infernal idiots* the phrenologists." *Ibid.*

"The difficulty with phrenology, is the *utter absence* of any *evidence* in favour of it." *N. Am. Rev. July*, 1833.

"Of the principal phrenological writers, including Gall and Spurzheim, and with one exception in favour of Mr. Combe, who appears to us to have allowed his natural acute ness and professional tendency to hair-splitting to bias his better judgment—we can say with sincerity, that to judge from their works, they are alike deficient in *learning* and *accuracy.*" *Ibid.*

"The most extravagant departure from all legitimate modes of reasoning, although still under the colour of anatomical investigation, is the system of Dr. Gall. It is sufficient to say, that without comprehending the grand divisions of the nervous system, without a notion of the distinct properties of the individual nerves, or having made any distinction of the columns of the spinal marrow, *without even having ascertained the difference of cerebrum and cerebellum*, Gall proceeded to describe the brain as composed of many particular and independent organs, and to assign to each the residence of some special faculty." *Sir Charles Bell*, 1836.

"Experience shows that the system of organs proposed by Gall has *no foundation.*" *Elements of Physiology, by by J. Müller. M. D.*; *translated with notes by W. Baly. M. D. London*, 1838, *p.* 837.

"M. Magendie is very right, in placing Cranioscopy in the same category, as Astrology and Alchymy." *Ibid p.* 838.

These quotations from Müller receive no comment from the translator and annotator, and must be supposed, therefore, to express his own views.

It would be easy to multiply quotations written in the same general spirit, but these will suffice to show the manner in which phrenology was received. For a triumphant answer to the mendacious assertions that they contain, I refer to the reports which I have the honour to present to the public.

But I must here respectfully record my dissent from an opinion recently expressed by the most distinguished of American phrenologists, in a late publication, with the general views of which I entirely coincide: "I have said nothing" says Dr. Caldwell "about the *future* triumph of phrenology, for one of the best of reasons. Its triumph is *past;* and there will be no renewal of the war which it has sustained with such preëminent success." *Thoughts on the true connexion* between *Phrenology and Religion.—Louisville*, 1839, p. 19. Again, "Where is the writer of standing, where the periodical of influence and authority, that now contests the truth of these principles? they do not exist." *Ibid* p. 22.

What is a triumph? Clearly a victory in which the opponent is completely subdued, and the victor's superiority acknowledged. Can phrenology yet claim such a triumph? A short time ago the London Quarterly treated it as false, in a review of Combe's outlines. And since that, the same Review has said of the accomplished Chenivix, that though "a man of vigorous talents and very considerable learning, he became a sad dreamer in his latter days, he was a devout disciple of the *Phrenological quacks.*" While I now write, a number of the Boston Quarterly Review, comes under my notice, in which it is said that the "*ignorance and simplicity*," betrayed by phrenologists, "can hardly be expected not to excite a smile of pleasantry, or of *contempt*, in every man of ordinary discernment and information." (April, 1839. p. 229.) But twelve months ago the respected author himself, from whom I have quoted, wrote answers to two opponents, both of whom, are medical professors. Not six months ago, (Nov. 26. 1838, in the Cincinnati Daily News) he challenged three gentlemen, Drs. Mc. Dowell and Harrison, and Professor Mussey, to controversy, on account of their denunciations of phrenology. But last winter, the professor of Physiology in the Medical college of this city spoke of phrenology as a mere chimera. Every where we meet with denouncers and ridiculers of phrenology. Every where is the acknowledgment of our belief received with a half-repressed smile. Surely, this cannot be called a triumph. That phrenology will ultimately triumph, I profoundly believe. That it has done so, I am sorry to see stated. For it has a tendency to slacken the energy, and cool the ardour, of young phrenologists, to be told that "the entire day of actual war has gone by;" and that the presumption is "they are flocking to gather 'the spoils of victory.'"

It is true, indeed, that the principles of phrenology are proved, but the *proof* of right no more constitutes a triumph in science, than in war. It was *right* that Poland should be free, but Russia *triumphed*. That "by all who have studied phrenology its doctrines are accredited" may be, and is true, but the question is one of acknowledgment, not of proof, and that examination and conviction are inseparable, was as true before Dr. Caldwell himself accredited phrenology, as it is at this day. When the physiology of the brain, as taught by phrenologists, shall be that taught in all medical institutions; when the mental philosophy developed by that physiology shall be the mental philosophy of the schools and colleges; when the language of that philosophy shall be seen in the current literature, and be heard in the senate, from the pulpit and the bar; then, and not till then, will phrenology have triumphed. And before that auspicious day come, long and arduous must be the struggle.

But with pleasure and gratitude do we acknowledge, that that part of the struggle which has passed, has been far more arduous than that which now is, or which is yet to come. That whatever accusation may lie against others, the charge of fair-weather championship can never be brought against the Combes and the Caldwells.

CRANIOLOGY was the name early bestowed on the physiology of the brain, but Gall thus objects to it: "They call me Craniologist, and the science which I discovered, Craniology; but, in the first place, all learned words displease me; next, this is not one applicable to my profession, nor one which really designates it. The object of my researches is *the brain.* The cranium is only a faithful cast of the external surface of the brain, and is, consequently, but a minor part of the principal object. This title, therefore, is as inapplicable as would be maker of rhymes, to the poet."*

The present name PHRENOLOGY, was not first applied by Spurzheim, as Mr. Capen states;† but by Dr. Forster.‡

To designate the organs, Gall chose words or phrases expressive of the manifestations which he had observed them to produce, leaving their confirmation or correction to future observers; following, in this respect, the rule generally adopted by scientific investigators.§ Spurzheim, conform-ably with enlarged views of function, changed many of these names; in some instances, to others more appropriate or comprehensive. In all his changes, however, he was not so successful.

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* Letter to Baron Retzer, Teutchen Merker, 1798.

† Biography of Spurzheim, Boston, p. 160.

‡ Sketch of Phrenology, by Dr. Thomas Forster, London, 1816. A Guide to Human and Comparative Phrenology, by Dr. H. W. Dewhurst, London, 1831, p. 14. Recuil des Ouvrages et de Pensées d'un Physicien, &c. par Thomas Forster, Francfort sur le Mein, 1836. p. 12. Elliotson's Blumenbach, 1838, p. 690.

§ See Gall, vol. 4, p. 13.

I shall now exhibit a conspectus of the principles established, and the organs discovered, by the father of phrenology; together with his proposed methods of classifying the organs, and of classifying men according to organic development. Also, a brief account of his anatomical discoveries, and of the views he entertained concerning the application of his doctrines. He established,

1. That the mental faculties are innate.

2. That the brain is the organ of mind.

3. That the form and size of the brain are distinguishable, by the form and size of the head or skull.

4. That the mind possesses distinct faculties, and the brain is composed of distinct organs, and that each mental faculty is manifested through a distinct cerebral organ.

5. That the size of each organ can be estimated during life, and that size, other things being equal, is the measure of power.

6. That each organ, when predominantly active, impresses the body with certain uniform attitudes and movements, called its natural language.

He discovered the following organs: 1. Amativeness. 2. Love of Young. 3. Attachment. 4. Propensity to oppose, or Combativeness. 5. Propensity to injure, or Destructiveness. 6. Secretiveness. 7. Acquisitiveness. 8. Self-esteem. 9. Love of approbation. 10. Cautiousness. 11. Educability, (afterwards discovered by Spurzheim and the Edinburgh phrenologists to be compound, and to include the organ of Individuality and of Eventuality.) 12. Locality. 13. Form. 14. Language. 15. Colour. 16. Tune. 17. Number. 18. Constructiveness. 19. Comparison. 20. Causality. 21. Wit. 22. Ideality. 23. Benevolence.

24. Imitation. 25. Veneration. 26. Firmness. 27. Wonder. [See Gall, vol. 5. p. 211.]

Gall considered it probable, that there is an organ for the *propensity to take food.* Dr. Hoppe, Mr. Crook, Mr. Combe, and others, have established it.

He supposed, at one time, that love of life is a distinct function, and thought he had discovered its organ ; but subsequently considered himself mistaken. A distinguished editor of Scotland, being in conversation with Mr. Combe, remarked, that his love of life was such, that he would rather suffer " eternal damnation," than be annihilated. Mr. Combe contrasting the vivacity of the feeling in this gentleman, with its comparative weakness in himself, concluded that the difference probably depended upon the different development of some distinct cerebral organ, and from that time searched for an external sign. Dr. Combe, however, has the merit of making the only valuable observation which I have seen upon this subject. [See Phren. Journal, 1826, p, 467, and the succeeding lectures.]

Gall considered it probable that there is an organ of *attachment for life.* [Vol 3, p. 306.] Vimont thinks he has discovered its seat.

He gave reasons for believing the *sense of order* to be a distinct fundamental faculty. [Vol. 4. p. 283.]

He thought the *sense of time* must be a fundamental faculty. [Vol. 5. p. 98.]

He discovered the dependence of attachment to place, on cerebral development, but confounded it with Self-esteem to which it lies contiguous. Spurzheim seems to have corrected this error, but the functions of the region between Self-esteem and Love of Young are still in dispute.

It has been objected to Gall, that his works are a series of disjointed facts. No assertion can be more incorrect. He did not, indeed, reduce his doctrines to a system of exact classification, but he pointed out almost all that is valuable in the classifications now adopted. Gall was not a system maker, according to the usual acceptation of the term. But while he kept assiduously at work, establishing fact after fact, he was keenly scrutinizing the results of his labours that he might discover, if possible, the arrangements of nature's self. Well was he rewarded for his philosophic caution. System gradually "rose like an exhalation" from the seeming chaos. It is believed by the faithful followers of Mahomed, that to form the temple of Mecca, a stone came ready hewn from every mountain in the world, exactly fitted to fill the place it now occupies. So with the phrenological organs. All at first seemed confused and unrelated; but gradually they grouped themselves together, each in its proper place, and formed, before the admiring eyes of the great investigator, a system of wondrous harmony, and of matchless symmetry and beauty.

"After I had a thousand times considered the arrangement of organs," says Gall, "I was struck with the following great truths:—

"1. The qualities and the faculties, which are common to man and animals, have their seat in the inferior posterior, the posterior inferior, or the anterior inferior parts of the brain.

"2. The qualities and faculties which man exclusively enjoys, and which form the barrier by which he is separated from the brute, have their seat in those parts which are wanting in animals, and we must consequently seek them in the anterior superior, and the superior anterior parts of the forehead.

"3. The more indispensable the qualities and faculties may be, the more nearly are they placed to the base of the brain, or the median line.

"4. The organs of the fundamental qualities and faculties which aid each other, are placed near each other, as the organ of the love of offspring, and that of the instinct of propagation.

"5. The organs of the fundamental analogous qualities and faculties are also placed near each other, as those of places, colours, tones and numbers.

"Every one must be struck," he continues, "with the profound wisdom which is manifested in the arrangement and successive order of the organs.—We discover there the hand of God, whom we cannot cease to adore with the more astonishment, in proportion as his works are more displayed before our eyes."*

Gall arranges heads into three groups: 1. Those of idiots. 2. Those of men whose talents are only moderate. 3. Those of illustrious men, of vast and eminent genius.†

He divides men into six classes in respect to internal, moral, and intellectual forces.

1. Those in whom the faculties proper to man are completely developed, while the animal faculties are feebly developed.

2. Those in whom the animal faculties are greatly developed and the higher faculties but feebly.

3. Those in whom both the higher and lower faculties are considerably developed.

4. Those in whom one, or a few of the faculties are developed to an extraordinary degree, while the others are at or below mediocrity.

5. Those in whom some, or one, of the organs are very little developed, while the others are more favourably developed, and active.

6. Those in whom the organs common to animals and those proper to man, are equally moderate in their development.‡

These he elucidates in a brief but masterly manner.

The organs of the inferior anterior, and superior anterior portions of the brain he divides into five regions.§

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* Gall, vol. iii. p. 130. † Gall, vol. i. p. 179. ‡ Gall, vol. i. p. 251.
§ Gall, vol. iv. p. 232.

The faculties may, he states, be differently classified according to the view we wish to take of them.

1. Into sentiments, propensities, talents, and intellectual faculties.

2. Into faculties common to man and brutes, and faculties proper to man.

3. Into fundamental faculties and their attributes.*

This last is the arrangement which he prefers and adopts.

Gall in 1805, demonstrated the brain to Riel, who acknowledged " that he had found more in Gall's dissections of the brain, than he thought any man could have discovered in his whole life.† " Having completed my studies in 1804," says Dr. Spurzheim, " I became associated with Dr. Gall, and devoted myself entirely to anatomical inquiries. At this period, Dr. Gall, in the anatomy, spoke of the decussation of the pyramidal bodies, of their passage through the pons varolii, of eleven layers of longitudinal and transverse fibres in the pons, of the continuation of the optic nerve to the anterior pair of the quadrigeminal bodies, of the exterior bundles, of the crura of the brain diverging beneath the optic nerves, in the direction which Vieussens, Monro, Vicq d' Azyr, and Reil had followed, the first by means of scraping, the others, by cutting the substance of the brain. Dr. Gall showed further the continuation of the anterior commissure across the striated bodies; he also spoke of the unfolding of the brain that happens in hydrocephalus."‡

From numerous passages in the works of Gall, we learn that he clearly perceived and pointed out the vast importance and comprehensiveness of his doctrines. He did this as early as 1798, in his admirable letter to Baron Retzer, published in the Teutchen Merker. Again, in 1802, in that noble document, his petition and remonstrance to the emperor of Austria. And in the opening of the sixth volume of his smaller work he remarks: "I have always had a consciousness of the dignity of my researches, and of the extended influence which my doctrines will hereafter exercise on all the branches of human knowledge; and for this reason I am indifferent what may be said, either for or against my works." And, immediately afterwards, as if a vision of futurity had just burst upon his sight, he exclaims: "What advances in comparative anatomy, physiology, and comparative pathology of the nervous system! What fruitful sources of undeniable principles for philosophical studies, for the art of selecting, deducing the good from the dispositions of individuals, for directing the education of the young! What precious materials for a criminal legislation, founded upon a complete knowledge of the motives of human actions! How different will history appear to him who knows how to appreciate it, according to the dominant propensities and faculties of those personages, who have been its great actors."*

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* Gall, vol. vi. p. 270. † Gall, vol. vi. p. 303.

‡ Spurz. Anat. of the Brain, Boston, 1836, p. 16.

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* Gall, vol. 6, p. 2. It is said by Capen, that, in Paris, Dr. Gall realized a handsome fortune. [*Biography of Spurzheim, p.* 37.] Dr. Elliotson, on the contrary, whose means of obtaining correct information seem to have been ample, says, that "Till Gall established himself in Paris, and rose into a very fine practice, (he was physician to many ambassadors,) he kept himself very poor from spending upon his phrenological pursuits, all he gained, after absolutely necessary expenses. And although he lived then in the most private manner, with the comforts indeed of a handsome lodging, a carriage, and a garden with a small house in the suburbs, he had saved so little, that had his illness been protracted, his friends, in a few months, must have supported him." [*Phys. 5th ed. p.* 404.]

Gall, in his petition and remonstrance to the emperor of Austria, [1802] says, "3. To this perilous injury to my reputation, involving the loss of all the advantages arising from the hard earned confidence of the public, must be added a consequence deeply affecting my interest. My collection of plaster casts,—of the skulls of men and animals, and of the brains of men and animals in wax, has cost me about *seven thousand gulden;* and I have already made very expensive preparations, exceeding in amount *fifteen thousand gulden,* for a splendid work on the functions

I have stated thus at length our amount of indebtedness to Gall, as the groundwork of the opinion which I now express, with respect, but with the profound conviction of its truth, that from by far the greater part of British and American phrenologists, Gall has never received justice. This is not wonderful, indeed, for his works were expensive, and, until recently, entirely in a foreign language. Besides, Spurzheim, and not Gall, introduced phrenology into Britain, and taught it in the United States. His manners were winning, his mind of a high order, and calculated to leave an impression of intellectual and moral greatness. And among those who received the doctrines which he taught, Reverence bowed to him, and Benevolence warmed towards him, and Friendship clung to him, and Conscientiousness yearned to discharge, as far as possible, that debt of obligation to which the inestimable truths of which he was the minister, had subjected it, and it was seemingly forgotten that he was not the master. Gall and Spurzheim were used as synonymes, and the latter more often and with more praise than the former. Hence, it appears to me, are we to account for the frequent occurrence of the phrase "*founders of phrenology*" applied to Gall and Spurzheim, though Spurzheim had no more to do with founding phrenology than the writer of this sentence; and for such opinions as the following:

"*Dr. Spurzheim found* by observation, that in an individual who manifests great self-esteem, a certain part of the brain is fully developed: and likewise, that the individual carries his head high, and reclining backwards."*

"The mind of Dr. Spurzheim, in our opinion, seems to have been cast in a still more metaphysical mould than that of Dr. Gall, who, though he has shown very uncommon

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of the brain, which has been universally demanded of me: this property will be rendered useless, by destroying my reputation." [*See Combe's translation of Gall and others, on the cerebellum, &c. London*, 1838, *p.* 334.]

* Combe's answer to Roget.

acuteness in his abstract inquiries upon mind, has yet left some points so feeble as to *endanger the whole system.*"*

"Spurzheim, the anatomist, who, by dissecting the brain, *first* displayed to the eye its fibrous and ganglionary structure, and demonstrated the direction and connection of its filaments;"—"the philosopher, who, by the greatness of his own mind, *raised* craniology and physiognomy to the ethical science, phrenology."†

"Gall and his *no less illustrious* associate."‡

"From the moment Spurzheim became the associate of Gall, the anatomy of the brain assumed a new character."§

"What a debt of gratitude do we owe to Gall."—"But a *still deeper debt* do we owe to Spurzheim, whose sagacity, amidst *a labyrinth of apparent absurdity*, found a clew to guide him to the shrine of Reason—whose resistless understanding, penetrated the *chaos of deformities*, *exaggerations and abuses*, and saw, beneath the *crude* and *shapeless mass*, the true design of Omniscient Benevolence."‖

"That Spurzheim was superior to Gall as an anatomist, we believe, all admit."¶

"Time will prove that the foundation of the science of phrenology was laid by Gall: but, that without the aid of Spurzheim, *the superstructure had not been reared.*"**

I might greatly increase the number of such quotations, but these will suffice. Time, the great vindicator, who ever restores to the wronged one the riven spoils, will decide strangely indeed, if he decides as Dr. Stedman indicates: "Without the aid of Spurzheim, the superstructure had never been reared!" Before Spurzheim's engagement, as Gall's assistant, the father of phrenology had thrown down the accumulated superstructures of ages, had cleared away the rubbish, had laid the foundation of the new temple broad and deep, and had reared by far the greater part of its massive walls and its everlasting towers. The faithful student of Dr. Gall's works cannot, I think, read some of these quotations without a feeling of regret, that Dr. Spurzheim's eulogists should have thus attempted to raise their friend at Dr. Gall's expense. A just appreciation of his talents did not require it; for we need not admire Spurzheim the less, because we admire Gall the more.

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* Chenivix's art. in For. Qua. Rev. † Annals of Phren. Boston, 1835. p. 72. ‡ Translator's preface to Gall's works. § Memoir of Spurzheim, by Dr. Carmichael, p. 4. ‖ Ibid p. 95. ¶ Memoir of Spurzheim, by Nahum Capen. p. 164. ** Dr. Stedman's preface to Spurzheim's anatomy of the brain. Boton, 1835.

Let me here then recapitulate the following undeniable facts: Dr. Gall demonstrated the unsatisfactory nature of all existing explanations of mental phenomena, and of the functions of the brain, and the true method of investigating such phenomena, and such functions. He alone established all the great fundamental principles of phrenology. He discovered three-fourths of all the organs yet known. He discovered and developed the natural language of the organs. He pointed out, in a general way, the applications of phrenology to insanity, education and jurisprudence. He indicated the mode in which men, and the organs might be classified, and in which investigations should be continued. Finally, he discovered the great leading facts concerning cerebral structure; in developing which, those who followed him had merely to pursue the same course.

In view of these things how can it be pretended that to Spurzheim is due equal, if not superior merit? The question is not whether Spurzheim had superior mental capacity, though the magnificent cerebral development of Gall must decide that question in the negative, but whether Spurzheim *achieved* more than Gall. And when so expressed, the answer must rise up in the mind of every man, with a feeling of surprise that the question should ever have been conceived.

But I must go one step farther, and with reverence, with a deep feeling of responsibility, but desiring in all things, and above all things to be true to my own convictions, must say, that I do not consider Dr. Spurzheim as entirely blameless. In his works we find none of that beautiful display of gratitude towards his master, which we so often meet with in the works of Mr. Combe and others towards himself, but on the contrary, a tendency to depreciate. It had been asserted that Gall pretended to have discovered an organ of murder. Now Gall never pretended to any such discovery. What he did discover, and what he stated himself to have discovered, was a propensity to kill for food. Yet Dr Spurzheim countenanced and repeated the accusation. Gall was accused of maintaining that there was an organ of theft; now, he never maintained that theft was any thing else than the abuse of acquisitiveness. Yet Spurzheim countenanced and repeated the accusation. Again, Dr Gall gives seven tests of a fundamental faculty* which Spurzheim imitates,† and then, without accrediting Gall, adds, that Gall did not determine any of the organs in conformity with such tests. But once more, Spurzheim says, " His (Dr. Gall's) talent, and the sphere of its operations had their limits, and since our separation in 1813, Dr. Gall has neither made a new discovery, nor a step towards its improvement."‡ This, is at least, an inconsiderate statement, for in 1813, Gall was fifty-eight years of age, two years older than was Dr. Spurzheim at the time of his death; he had been engaged from his youth in intense cerebral action; his powers had begun to decay; he had almost fulfilled his destiny; nothing remained for him to do, but that he should complete the presentation of his labours in due form to the world. Truly did he himself remark, " The foundation of this useful doctrine is established, and it should be as firm as the facts, the materials of which it is constructed. But I am far from believing, that the edifice is finished! Neither the life nor the fortune of one man, can be sufficient for this vast project."* I think it cannot be shown in the annals of the human race, that any man ever laboured more assiduously, or more successfully, than did Dr. Gall, or that any man ever presented to his race so rich a boon, and is it becoming, to damn him with faint praise, because he did not labour still more assiduously and successfully, and present a still richer boon? Because he did not show in the decline of life,the vigour of undecaying manhood? True it is that Gall's talent, and the sphere of its operations had their limits; he was finite; but that limit was as wide as man's ever was. He was one of those few immortals who for ever tower in awful majesty above the waters of oblivion, marking the grand eras of human history, far better than years, or Olympiads.

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* Gall. vol. iii. p. 134, and vol v. p. 250. † Spurz. vol. i. p. 132.

‡ Spurzheim's Notes to Chenivix, note 3. p. 99.

But though I cannot for a moment consider Spurzheim as having equal merit with Gall, yet to him also we do owe much. He stood by phrenology firmly, and battled for it manfully, when the most fiercely assaulted; he for a long course of years devoted to its investigation and promulgation, talents and energies of a high order. He corrected some errors into which Gall had fallen, and made many observations tending to strengthen and confirm his discoveries. He, himself, made other discoveries, both in the anatomy, and physiology of the brain. He discovered the organ of Conscientiousness, that of Hope, of Size, of Weight, of Order, and of Time, and proved the organ of Educability to be compound. He was the first to apply, in detail, the doctrines of phrenology to the treatment of the insane, and the direction of education; which he did in an admirable manner. For these things his memory will ever be held sacred; and because of them, he was, on the death of Gall in 1828, deservedly acknowledged by universal consent, as the head of the new philosophy. But not long did he survive his great master. In 1832, just as America had commenced to be blessed with the outpourings of his vast knowledge and experience, his light was extinguished.

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* Gall, vol. vi. p. 3.

But Mr. Combe, who had long been second only to Spurzheim, survived. He had advocated phrenology with singular success, and repelled its assailants with manly vigour, so tempered with knightly courtesy, that, while they reeled from the conflict, they could hardly withhold respect and praise from the victor. Perhaps no man has a greater power than he, of reducing an argument into its elements, and of separating whatever is sound, from whatever is fallacious. His fine analytical talent acts with the readiness and certainty almost, of a chymical test. The crowning merit of Mr. Combe, however, consists in his complete knowledge of the principles, details, and evidences of phrenology; his zealous and masterly application of them to the advancement of human civilization; and in the clearness, force and beauty, of his writings, which, while they satisfy the most profound judgment, and gratify the most refined taste, are readily comprehended by the popular mind. His works, therefore, are more extensively read than those of any other phrenologist. One of them, The Constitution of Man, has, I believe, a circulation unparalleled in the history of philosophical works. In it he has well nigh solved the problem of human happiness and human destiny. In reading it the pulse of the philanthropist beats high with excitement, his muscles stiffen with energy, his countenance beams with anticipation, and his eye brightens with hope, as he looks through its pages at the panorama of coming events, and sees Justice and Benevolence, surely though slowly, subjecting all things to themselves; as he sees that the golden age, which poets feigned to be past has yet to come; that the course of society is not as from noon to night, but as from dawn to meridian day.*

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* I have before me, "An exposure &c., of Combe's Constitution of

On Combe then did the mantle descend at Spurzheim's death. Nobly and gracefully has he worn it, and long may the time be, before this third prophet is summoned from his sphere of usefulness!

It would be a pleasing employment to do justice to all who have been engaged in the promotion of phrenology, but my limits would not permit, even if I had ample knowledge for the task. I can therefore merely say, in brief, that to Dr. Vimont, as before observed, are we indebted for the best work on comparative phrenology; he thinks too, that he has discovered two organs which have not been before alluded to: namely, a *geometrical sense*, and a sentiment of *the beautiful in arts*. Let not the lamented Uccelli of Florence be forgotten; who, for expressing his belief in phrenology, lost his chair in the University of that city, was persecuted with blind malignity; to whose remains were denied the honours which his students wished to pay, and of whom all biographical accounts were prohibited. To Sir George Mc. Kenzie, Mr. Cox, Mr. Simpson, Mr. Watson, Mr. Scott and other collaborators of Mr. Combe, much credit is due, and also to Dr. Hoppe of Co-

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Man; being an antidote to the poison of that publication, by Wm. Gillispie. Edinburgh, 1837." I advise those who can borrow this work, to do so, and read what has been called "an efficient antidote" (see Methodist Magazine,) to Mr. Combe's work, by a gentleman "more than a match for Mr. Combe," (see Christian Advocate,) by an antagonist, in short, "whom it will be difficult if not impossible to vanquish." (See Edinburgh Evening Post.) The chief argument of Mr. Gillispie, may be thus stated: "If Mr. Combe be right, then somebody else is wrong; therefore, Mr. Combe is wrong." I leave the author to throw it into the syllogistic form. But I must really give him credit for the intimate acquaintance he manifests with Hudibras and Don Quixotte, the Dictionary of Quotations, and the flowers of twaddle and vituperation. He also defends the Devil with much zeal, but for what reason I am at a loss to determine, seeing that Mr. Combe no where attempts to depreciate the merits, or interfere with the prescriptive rights of that powerful potentate.

penhagen, an able and indefatigable advocate of the phrenological doctrines.

To Dr. Elliotson are we indebted for his early, zealous, and unremitting advocacy of phrenology in England. He has the merit, too, I believe of being the first writer in the English language who has attempted to do full justice to the comparative merits of Gall. Whilst preparing the matter which constitutes this sketch, I receivèd from a friend the doctor's notes to the fifth edition of Blumenbach, which have enabled me to make my own more complete. It was pleasing to find the claims of Gall so ably maintained, but painful to witness the doctor, in the ardour of his zeal for Gall's fame, seem anxious to destroy that of Spurzheim, by presenting all that he thought exceptionable in his works and character, and by keeping out of view nearly all that was good and great.

Dr. Elliotson, has, however, been assailed for stating what is indubitably true, regarding Spurzheim's altering the situation of organs on the bust. The alterations which he mentions, and some others, I pointed out three years ago to the New York Phrenological Society, and to my friends many times since. And also, in November last, to a distinguished phrenologist, who wrote to Mr. Capen, the biographer of Spurzheim, to ascertain whether the chart published in the last edition of Spurzheim's Phrenology, and the bust purporting to be his, and sold by Marsh, Capen & Lyon, were authorized by Spurzheim. The answer was that they were made "according to his directions before his sickness." Believing that the cause of truth cannot be injured by rectifying error, any more than that metal can be depreciated by refining away its dross, in December I exposed these discrepancies, in print, and showed that Spurzheim was at striking and irreconcilable variance, not only with other phrenologists, but with his former self, and with nature. The London Phrenological Journal notices the article, and approves of the conclusions drawn from its facts and statements; namely, that Dr. Spurzheim's latest bust was probably marked according to some *fancied* propriety, and that the Edinburgh bust should be used in preference.

Again, Dr. Elliotson says, "To prove Dr. Spurzheim's speculative spirit, I may mention, that, instead of giving the origin of any of his asserted discoveries, as Gall did, and adding a host of examples, he tells us, in regard to the organ of inhabitiveness only, that a gentleman much attached to his house, had a particular spot of his head much hotter than any other; and, in regard to the organs of hope, &c., he neither tells us how he discovered them, nor adduces a single proof." On this, Mr. H. Haley Holm, in the London Medical Gazette, thus remarks, "Does Dr. Elliotson mean to insinuate that Spurzheim was not justified in modifying his opinions, as experience gave him further opportunities of perfecting them?" I confess that I cannot perceive the appositeness of this question. Dr. Elliotson has been insinuating no such absurdity. What he complains of, and justly, may be best seen after quoting another and succeeding passage from Mr. Holm: "I will direct immediate attention to the following quotation from it, (Spurzheim's Phrenology,) in order to show Spurzheim's philosophical turn of mind, as well as his candour: 'In examining the fundamental powers of the mind and their organs,' says he, 'I shall *always* follow the same procedure. I shall first consider the individual actions, then *give the history of the discovery of the organ*,' &c." Now it is obvious that Dr. Spurzheim has not fulfilled his own conditions, with respect to the organs mentioned by Elliotson; he has not given "the history of the discovery of the organs." And I agree with Dr. Elliotson that this is an important omission. To show the necessity and value of such details, it may be mentioned that the growth of the brain in adult age, in particular directions, from special excitement, is justly considered as a most interesting question. We want facts on this subject, well authenticated facts. Now Spurzheim says, "It is a remarkable fact, that the forehead increases very early, and continues, when exercised, to grow very late in life. I had *positive observations* that, *after the age of thirty-six* and *forty years*, the forehead has increased *an inch* in size."* Had he shown *how*, and *when*, and *on whom*, his observations had been made—had he, especially,produced the *casts and measurements* of the heads to which he refers, before and after such remarkable increase in size, he would have done much towards settling this question. As it is, however, he leaves the matter just where he found it; for, with all respect for the opinions of others, I must be allowed to express my own, that the bare assertion of any man is not the sort of evidence,from which to draw a philosophical conclusion.

"To the everlasting honour of Edinburgh," to use Dr. Elliotson's words, "not only was the first Phrenological Society established there, but the first Phrenological Journal." There is also a journal published at Paris, and another at Copenhagen. The present Phrenological Society of London was established, I believe, in 1824, under the auspices of Dr. Elliotson. That of Paris, which numbers among its members some of the most celebrated medical men of France, was established in 1831, and holds its annual meetings on the 22d of August, the death-day of Gall. In 1836 the number of phrenological societies in Great Britain alone, was twenty-nine.

The HISTORY OF PHRENOLOGY IN THE UNITED STATES is readily told. In 1822, *Dr. John Bell* republished at Philadelphia, with a short preliminary discourse, Mr. Combe's Essays on Phrenology. This appears to have been the first publication in favour of the science, issued in the United States. A few years afterwards, *Dr. B. R. Coates* of Philadelphia, published a strong article in reply to Professor

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* Spurzheim's Phreno ogy, vol. i. 307.

Warren, of Boston, who had attacked phrenology. In 1823, Professor *Dr. John D. Wells*, of Bowdoin College, Brunswick, state of Maine, on his return from Europe, where he had heard phrenology taught, by Gall himself, commenced an annual exposition and recommendation of its doctrines, to his class, which he continued, I believe, as long as he remained in the college.

The lamented *Godman* was an advocate of phrenology. In 1829 he spoke of "the renowned, the indefatigable, the undefeated Gall."* And, in his edition of Bell's Anatomy, he contraverts Bell's dicta against the science, and remarks, "This is the foundation upon which the doctrines of Gall and Spurzheim rest,—purely upon observation,—and this is the reason why these doctrines have so triumphantly outlived all the misrepresentation and violence of opposition."†

On the 4th of August, 1832, Dr. Spurzheim landed in the United States; and commenced lecturing at Boston, on the 17th of September, but was interred, alas! just two months afterwards. On the 31st of December, 1832, the birthday of Spurzheim, the Boston Phrenological Society was established, and in three months numbered ninety members. Several similar societies are now organized in other cities of the United States. In October, 1833, a quarterly journal, The Annals of Phrenology, was commenced in Boston, and continued two years. In October, 1838, a monthly periodical, The American Phrenological Journal and Miscellany, was commenced at Philadelphia.

But the American, who, above all others, has distinguished himself by his zeal and labours in favour of phrenology, is Dr. Charles Caldwell. On his return from Europe, where he had heard Dr. Gall, he prepared, and in 1821—2 delivered a brief course of lectures on the science, to his class in the medical department of Transylvania College. This was the first course ever delivered in the United States.

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* Godman's Addresses. Philadelphia, p. 101.

† Bell's Anatomy New York, 1827, vol. i. p. 165.

The Doctor has repeated it to his successive classes, in that college, and the college of Louisville, every winter since that time. In the spring of 1822, he delivered a popular course to the citizens of Lexington. In 1823, he lectured at Louisville. In 1824, at Nashville. In 1825, at Baltimore and at Washington, which led to the formation of a phrenological society at each of those places. In 1826, he lectured again at Washington. In 1828, at Boston. In 1835, again at Nashville. In 1836, at Natchez. In 1837, at Philadelphia; and in 1838, at New-York.

The phrenological publications of Professor Caldwell are very numerous. He published, in 1824, by invitation of his class, a summary of his course of lectures previously delivered to them. In 1826, in the Edinburgh Phrenological Journal, two papers on the Phrenology of the North American Indians. In 1829, a paper entitled, New Views of Penitentiary Discipline and Moral Reform. [See Ed. Phren. Jour.] In 1831, An Essay on Temperaments. In 1832, An Essay on Mental Derangement. [See Transylvania Medical Journal.] And another entitled, Thoughts on True Epicurism. [See New England Magazine.] And an address on Intemperance, in which he gave the phrenology of that vice. In 1833, three essays: 1. On Moral Medicine. 2. On the true mode of improving the condition of Man. 3. On the Study of the Greek and Latin Languages. In 1834, An Essay on Physical Education, and two articles, entitled, Phrenology Vindicated; one published in the Boston Annals, and the other in the New England Magazine. In 1835, in the Boston Annals, a reply to Lord Brougham's attack. At Nashville, an Address on the Spirit of Improvement; and at Lexington, another on the Phrenology of Gambling. In 1838, a small volume, entitled, Phrenology Vindicated and Antiphrenology Unmasked. In 1839, a Letter to the Editor of the American Phrenological Journal. It is especially worthy of remembrance, that but few of the foregoing publications were printed for sale, the greater part were gratuitously distributed, principally throughout the Valley of the Mississippi. Thus numerous, important, and unremitting have been the labours of CHARLES CALDWELL, a name which must ever be associated with the introduction of Phrenology into the New World.

My intention was to treat somewhat at large on the present condition of Phrenology, but I have already passed the limits, and must hasten on, contenting myself with expressing the following view; namely, that a vague general impression exists that there *may be* something in phrenology after all. And among a great number a belief that *there really* is something in it. That a much smaller number, but still a formidable phalanx, believe in it, and advocate its doctrines. And a number comparatively small, study it with assiduity, as the science of their affections, and have a deep and abiding conviction of its vast importance. But in the Universities, Colleges, and Seminaries of learning, it has hardly been able to set its foot. And by the generality of professors, ministers, scientific and religious writers, it is proscribed and denounced, or at best treated with distrust and lukewarmness.

Among the signs of the times however, I would mention one especially indicative of the gradual advancement of phrenology in popular estimation. The periodical press wields great power, for good, or for evil. Pity, that it is not always employed in the cause of truth and virtue! There are noble exceptions, indeed, but it is undeniable that many editors forget the dignity and responsibility of their office, pander to vile tastes, and succumb to paltry and bigoted prejudices. Their duty it is to enlighten public opinion, but instead, they watch it with eagle eyes, to note its indications of change, that by quickly following they may seem to lead. With this class of editors, phrenology was considered for years as a capital joke, the very name seemed a fountain of gibes and jeers. Their phrenology, however, was not ours, but a windmill hero of their own; a thing of shreds and patches, of mere bones and bumps; a conglomeration of deformities, incongruities and puerilities, which they could set up, and hurl down, at pleasure, for the edification and amusement of their wondering readers. These editors, in general, have now ceased such Don Quixotisms, and betaken themselves to other amusement. Nay, many of them begin to touch their hats to the real presence, and acknowledge that there was a little mistake in the matter, or they would not, upon their honour they would not, have misrepresented so comely and respectable a personage. This is cheering; not because of any intrinsic value which their opinions possess, for the observations they make generally betray their ignorance of the subject, but because such opinions are significant of a favourable state of the popular mind. They are to public feeling, what the barometer is to the atmosphere, they show the amount of pressure from without.

To consider the authority of a mere mathematician on the Malthusian doctrines, or that of a mere anatomist on the immortality of man, as decisive of the truth or falsehood of those questions, would be absurd enough. But the testimonials of men of reputed accuracy of observation and soundness of judgment, in favour of doctrines the evidences of which they state themselves carefully to have examined, and, especially, when their decision subjects them to opprobrium, ought to have weight enough to secure for such doctrines, a respectful and patient investigation. To furnish such testimonials in great numbers, would be incompatible with my plan and limits; yet, I here present a few, in answer to the name-worshippers who are continually asking, with a contemptuous tone, *Who* believes in phrenology? These I shall extract from a volume of "Testimonials in behalf of George Combe, as a candidate for the chair of Logic in the University of Edinburgh." In doing which, I shall omit all that relates to Mr. Combe himself.

The following testimonials, among others, certify, that Phrenology, viewed as the abstract science of mind, is superior to any system of Mental Philosophy which has preceded it:—

From Richard Whately, D. D. Lord Archbishop of Dublin.

"I am convinced, that even if all connection of the brain with the mind were regarded not merely as doubtful, but as a perfect chimera, still the treatises of many phrenological writers would be of great value, from their employing a metaphysical nomenclature, far more logical, accurate, and convenient, than Locke, Stewart, and other writers of their school.

"That the religious and moral objections against the phrenological theory are utterly futile, I have from the first been fully convinced." p. 5.

From Sir G. S. Mackenzie, Bart. F. R. S. L., &c.

"During the last twenty years, I have lent my humble aid in resisting a torrent of ridicule and abuse, and have lived to see the true philosophy of man (phrenology) establishing itself wherever talent is found capable of estimating its immense value."—p. 8.

From Dr. Robert Macnish, author of "The Philosophy of Sleep," &c.

"The old system of metaphysics explained nothing satisfactorily; and like all persons who attempted to arrive at definite results by its assistance, since commencing the study of phrenology, a new light has dawned upon me, and various phenomena which were before perfectly inexplicable upon any known theory, are now of easy solution."—p. 15.

From Dr. Wm. Gregory, F. R. S. E., formerly President of the Royal Medical Society.

"I am firmly convinced of the truth of phrenology, and of its vast importance, as constituting the only satisfactory and consistent system of mental philosophy which the world has yet seen."—p. 22.

From the Honourable D. G. Hallyburton, M. P.

"Those who have dispassionately investigated the subject agree almost to a man, in maintaining, that phrenology rests upon evidence that is irrefragable; and that the time is not far off, when all philosophy of mind, which shall not rest upon *it* as a basis, will be put aside as very incomplete."—p. 50.

From Charles Maclaren, Esq., Editor of that distinguished newspaper, The Scotsman.

"Even though I had no faith in organology, I should still hold that phrenology possesses the following advantages: 1st. That it exhibits a more scientific and consistent classification of the human faculties than any other system of philosophy. 2d. That is gives a more lucid and satisfactory explanation of those varieties of national and individual character which we find in the world. 3d. That it has a more immediate and practical bearing on human conduct and the business of life, on morals, education, and legislation."—p. 57.

From Robert Chambers, Esq., one of the conductors of Chambers' Edinburgh Journal.

"I consider the scheme of mind, which results from phrenology, as not only superior to any hitherto laid before the world, but the only reasonably complete account of human nature which we possess, and the only one which can serve as a basis for any system of instructions."–p. 55.

From the Honourable Judge Crampton.

"I am persuaded that phrenology is amongst the most important of the acquisitions made to the stock of modern knowledge, and that upon it must be based every sound system of mental philosophy."

The following testimonials certify that phrenology contains a true exposition of the physiology of the brain.

From Dr. Wm. Weir, Lecturer on the practice of medicine, and one of the Editors of the Glasgow Medical Journal.

"Being myself convinced, after many years study of the subject, and numerous observations, that phrenology is the true philosophy of mind, I have taught it, in my lectures delivered to medical students, as the correct physiology of the brain. And I consider it impossible to give a proper view of the physiology of the brain, on any other but phrenological principles."—p. 37.

From Dr. John Mackintosh, Lecturer on the Principles of Pathology, and Practice of Physic.

"The more closely I study nature, in health and disease, the more firm are my convictions of the soundness of phrenological doctrines."

From Dr. James Johnson, Physician-extraordinary to the King, Editor of the Medico-Chirurgical Review, &c. &c.

"I have long been convinced that the science of *mind* can only be understood and taught, properly, by those who have deeply studied the structure and functions of its *material instrument, the brain.* I am convinced, that in this world, mind can be manifested *only* through the medium of *matter.*"—"Without subscribing to all the details of phrenology, I believe its fundamental principles to be based on truth."

The following testimonials certify to the utility of applying phrenology in discriminating the varieties of insanity.

From Sir W. C. Ellis, M. D. Physician to the Lunatic Asylum of the county of Middlesex.

"I candidly own, that until I became acquainted with phrenology, I had no solid basis, upon which I could ground any treatment, for the cure of the disease of insanity, which had long had a peculiar claim upon my attention."

From Dr. James Scott, Ll. B. Surgeon and Medical Superintendent of the Royal Naval Lunatic Asylum.

"As I have been for nearly ten years the medical attendant of the Lunatic Asylum in this great Hospital, my opportunities, at least, of observing, have been great indeed; and a daily intercourse with the unfortunate individuals entrusted to my care and management, has firmly, because experimentally, convinced me that mental disorder, and moral delinquency, can be rationally combated only by the application of phrenology."

The following testimonials prove the bearing of phrenology on the classification and treatment of criminals.

In April 1836, Mr. Combe visited Glasgow jail, and examined phrenologically some of the criminals. G. Salmond, Esq., Procurator-fiscal of Lanarkshire, drew up an account of the striking accuracy of Mr. Combe's diagnosis, which is certified to, by W. Moir, Esq., Sheriff-substitute of Lanarkshire, and Mr. D. M' Coll, Governor of Glasgow jail. Mr. Salmond remarks, in conclusion:—

"The accuracy of your conclusions has deeply impressed me with the benefit which would accrue to society from the application of such investigations towards the better classification of criminals before and after trial, to the selection and treatment of convicts, and even to the more certain identification of such criminals as might effect their escape from justice or confinement."

From Dr. E. Otto, Professor of Materia Medica and Forensic Medecine in the University of Copenhagen, Editor of the Danish Journal, "Bibliothik for Lieger," &c. &c.

"I consider it quite possible to distinguish men of strong animal propensities, who, when left uncontrolled by authority, or when excited by intoxication, would be dangerous to society, from men of mild dispositions, by examining their heads during life. I have practically applied this method of distinguishing the natural dispositions of men, and found it uniformly successful."

The following testimonials apply to the utility of phrenology in its application to the purposes of education:

From Alexander J. D. Dorsey, Esq., Master of the English department in the High School of Glasgow.

"It is my decided opinion, that he who teaches and *trains* upon phrenological principles, will experience a constantly increasing attachment to his profession, will invariably secure the affectionate esteem of his pupils, and will, as a necessary consequence, succeed in giving them a thorough EDUCATION, moral, intellectual and physical. I write this not in a theorising spirit, but from several years' extensive experience.

"In History, the use of phrenology is truly valuable. In fact, till I knew something of this beautiful system of mental philosophy, I never taught history properly, or, I may add, any thing else."—p. 35

From W. Hunter, Esq., A. M., late Professor of Logic, &c., in the Andersonian University, Glasgow.

"I am convinced that phrenology is the true science of the mind. Every other system is defective in enumerating, classifying, and tracing the relations of the faculties.

"I consider this science indispensably necessary in teaching any branch of education properly. And it is signally effective in exciting and directing the faculties of the mind without having recourse to corporal punishment, or even a peevish or resentful expression."—p. 51.

From some of the most distinguished of the Parisian physicians, including Broussais, Fassati, Bouillaud, Sanson, Cloquet, Vimont, and Voissin.

"Phrenology being in their opinion the most certain and complete science of the faculties of man, they consider that a good system of Logic cannot be more firmly based than upon the profound study of that science."

Use of Phrenology to Artists.

From George Rennie, Esq., Sculptor.

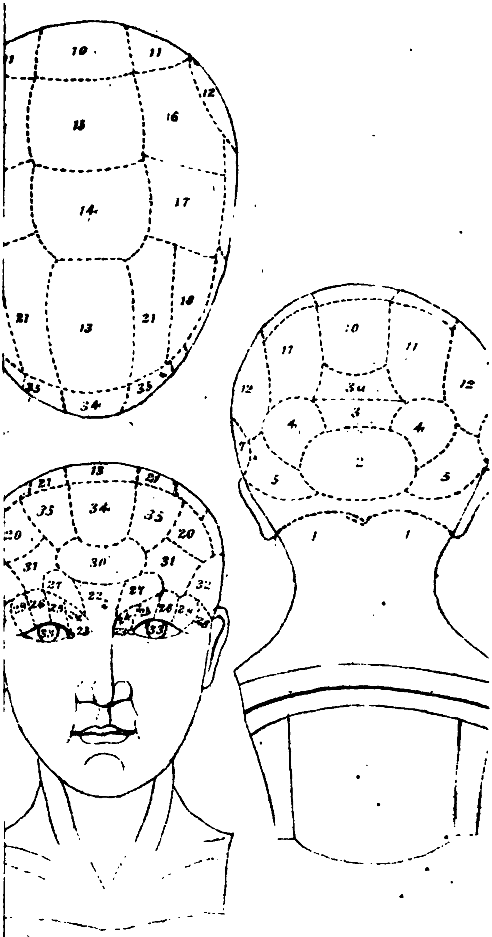
"As an artist, I have at all times found phrenology advantageous in the practice of my art, and that expression in almost every case coincided exactly with what was indicated by the cerebral development."

If some one, who has been accustomed to scoff at phrenology, should have accompanied me hitherto, I would respectfully, but candidly, say to him, at parting: If phrenology be true, then, by continuing to oppose it, you will merely injure and dishonour yourself. You may laugh, but laughter is not wit; you may scoff, but scoffing is not argument; you may shut your eyes, but it will not, therefore, be dark; you may raise clouds of dust, but you will merely obstruct your own vision, not extinguish the radiance of truth. Be candid and generous therefore, and till you have examined the subject in an adequate manner, acknowledge, that on what you have not properly investigated, you have no right to decide.

With the phrenologist, I would part in congratulation for what has been achieved, and in bright anticipations of future advancement. Not that very rapid progress need be hoped for. The students of the old philosophy, cannot be expected, in any great numbers, to abandon their painfully acquired notions, and go again to school. The aged are naturally conservative, and cling to old opinions and institutions, with amiable tenacity. Truth, however, is a revelation from the divinity of Nature, and never returns void of effect. But the truths of phrenology have to work their way through such mountainous obstacles; they have so many erroneous things to rectify, and so many alloyed things to purify, that the expectation of rapid advancement would indicate an imperfect knowledge of the true nature of our science. Besides, as a distinguished phrenologist recently remarked to me, " phrenology, in its highest sense, is the philosophy of a race, endowed with great cerebral capacity in the moral and intellectual regions." For ages will its truth be almost universally acknowledged, before it is fully comprehended and appreciated by the generality of the human family. In the mean time, each man will understand it, to a great extent, according to his peculiar organization.

I close this sketch, by putting on record my entire conviction, that when phrenology shall be generally accredited, it will be considered as the most interesting and surprising event in the history of human civilization, that the truth of its fundamental facts, should have been so long and so stoutly denied. To appreciate the discoveries of Galileo, the use of the telescope was necessary; to repeat the experiments of Harvey, much labour was requisite; to fully comprehend those of Newton, profound mathematical knowledge was often essential; but to recognize the facts on which the phrenological doctrines are based, needs no nicely adjusted optical apparatus, they are obvious to the naked eye; no laborious and intricate experiments, they present themselves in the head of every human being; no profound and peculiar acquirements, but merely the power of distinguishing differences in the dispositions and talents of men, and differences in the form and size of the human cranium and of its various regions.

NOTE.—Since all but the last two or three pages were stereotyped, a friend whose judgment I highly esteem, has suggested that my remarks on page 77, countenance the opinion that we are to found our belief on Spurzheim's observations, instead of going to nature and observing for ourselves. If such be the impression the words convey, I confess that I have not been successful in expressing my own meaning: that I have been misunderstood is at any rate, sufficient reason for attempting to be more explicit. I beg leave to state, therefore, that I do not object to Spurzheim's suppression of cases because we are called upon to believe on his evidence; but, 1. Because he stated that to give the history of the discovery of each organ, would form a part of the plan which he should always follow. 2. Because a professed discoverer should show that he himself has observed, before he requires others to do so, and this, it appears to me, is best done, by narrating the most striking cases which have come under his cognizance. Suppose Gall had merely asserted that the amative propensity is proportionate to the cerebellum, who does not feel how unsatisfactory would have been such a mode of publishing his discovery; and who does not feel as he reads the cases of that distinguished man, the duty of repeating his observations become more and more imperative. 3. Because, though the result has proved that Spurzheim had made the discoveries he claimed, were his mode of announcing them sanctioned as philosophic, the precedent would lead the unscrupulous to publish mere conjectures as discoveries, leaving the verification or disproof to others. 4. Because by omitting to record cases, the grounds on which we rest our belief are ever in a state of tradition. The Edinburgh phrenologists have obviated the difficulty in regard to the organs discovered by Spurzheim, and thus we now possess cases and casts in verification and illustration. To furnish these however was, I humbly submit, the duty of the discoverer himself. 5. Because, though personal observation should always be resorted to, as furnishing the most satisfactory evidence, the testimony of credible witnesses is a valuable col lateral ground-work of belief. Much more, to the purpose, might be said, but these observations will suffice, I hope, to obviate ambiguity.



RENOLOGICAL ORGANS.

DICATING THEIR RELATIVE POSITIONS.

INTELLECTUAL

r.

I. PERCEPTIVE.	
22	Individuality
23	Form
24	Size
25	Weight
26	Colouring
27	Locality
28	Number
29	Order
30	Eventuality
31	Time
32	Tune
33	

II. REFLECTIVE.	
34	Comparison
35	Causality

LECTURES ON

PHRENOLOGY AND ITS APPLICATIONS.

BY GEORGE COMBE, ESQ.

LECTURE I.

When a young man, I paid much attention to the prevailing theories of mental philosophy, frequently meeting a number of friends for the purpose of discussing the opinions of various metaphysical authors, hoping to obtain some practical views of human nature which would be serviceable in my intercourse with society, and in the pursuit of my professional avocations. But all my study proved fruitless of beneficial results, and I ceased to study the works of the metaphysicians. Hoping to obtain some more satisfactory notions of the mental functions from the physiologists, I attended the lectures of Dr. Barclay. All parts of the body were beautifully described, and their uses clearly explained, till he came to the brain; then was all dark and confused. He took great pains in dissecting that most important organ, but by a wrong method; he cut it up into slices like a ham, confessing his ignorance of its functions and intimate structure. The physiologists satisfied me no better than the metaphysicians.

From the 49th No. of the Edinburgh Review I received my first information concerning the doctrines of Phrenology.

Led away by the boldness of that piece of criticism, I regarded its doctrines as absurd, and its founders as charlatans. For twelve months ensuing I paid no attention to the subject; indeed, such was the unfavourable impression made on my mind by the Review, that when Dr. Spurzheim came to Edinburgh, I neglected to attend his first course of lectures, and should probably not have attended him at all, but for a fortunate circumstance. Coming out of the supreme court one day, my friend Mr. Brownlee invited me to attend a dissection of a brain, to be performed in his house by Dr. Spurzheim. I availed myself of this opportunity of comparing the method of Gall and Spurzheim, with that which I had seen practised by Dr. Barclay. Dr. Spurzheim did not slice, but began at the *medulla oblongata*, and gradually *unfolded* the brain by following its structure. In ten minutes he completely refuted the reviewer's assertions, and finally demonstrated his own anatomical views.

I immediately commenced to attend the second course of lectures of Dr. Spurzheim; and, independently of his physiological views, I found the explanation he gave of mental manifestations to be greatly superior to any with which I was acquainted. This was a great point gained, and I determined to pursue the study by an appeal to nature. Accordingly I purchased books, and sent to London for a large quantity of casts. They arrived in three huge puncheons; and when taken out, they covered nearly the whole floor of my drawing room. But when I saw them there, seemingly all alike, my heart sank within me, and I would gladly have buried them in the ground to get rid of them. However, my friends heard of my collection, and I soon had a great many to visit me—some to examine, and some to quiz. When I began seriously to examine them, I soon found that heads apparently alike were in reality very dissimilar. This encouraged me. I pursued my examinations, both of casts and of the heads of living persons, and gradually became firmly convinced of the truth of the new science. The meetings at my house, to hear my explanations, became more and more numerous, and in 1822 I was prevailed on to give public lectures. Thus, without the slightest intention on my part, I became a lecturer on phrenology about five years after first attending to the subject.

Of this narrative I wish to make two applications. 1. I desire to show you that, in taking up the phrenological doctrines, I was not led away by enthusiasm. 2. I wish to impress on your minds, that it is not by attending a course of lectures that you can become fully acquainted with phrenology. I deem it impossible to make you so acquainted in a hundred lectures. I come here, not to wage war upon your opinions, but to invite your attention to an important subject; not to convince you of the truth of all the details of phrenology, but to show you how to study and observe for yourselves. I admire not the mental character of those who have too great facility of belief; and Phrenology asks nothing but fair play, and candid, scrutinizing investigation.

PHRENOLOGY means the philosophy of the human mind, as manifested through the medium of the brain. This philosophy, as you know, has been opposed with great violence; and the opposition has not yet ceased. In being so opposed, however, it merely shares the fate of all new truths. "In every society," says Professor Playfair, "there are some who think themselves interested to maintain things in the condition wherein they have found them. * * * Even in matters purely intellectual, and in which the abstract truths of arithmetic and geometry seem alone concerned, the prejudices, the selfishness, and the vanity of those who pursue them, not unfrequently combine to resist improvement, and often engage no inconsiderable degree of talent in drawing back instead of pushing forward the machine of science. The introduction of methods entirely new must often change the relative place of men engaged in scientific pursuits, and must oblige many, after descending from the stations they formerly occupied, to take a lower position in the scale of intellectual improvement. The enmity of such men, if they be not animated by a spirit of real candour and the love of truth, is likely to be directed against methods by which their vanity is mortified, and their importance lessened." *Dissertation*, part II. p. 27.

It is well known that Harvey was treated with great contumely, and lost much of his practice, on account of his momentous discovery of the circulation of the blood.* Professor Playfair, speaking of Newton's discovery of the composition of light, says: " Though the discovery had every thing to recommend it which can arise from what is great, new and singular; though it was not a theory or system of opinions, but the generalization of facts made known by experiments; and though it was brought forward in a most simple and unpretending form, a host of enemies appeared, each eager to obtain the unfortunate preëminence of being the first to attack conclusions which the unanimous voice of posterity was to confirm."†

But the most striking instance, perhaps, of reckless and unprincipled opposition to newly discovered facts, was the opposition made to Galileo's discovery of the satellites of Jupiter. This discovery was made simply from Galileo's having invented a telescope, by which bodies invisible to the naked eye were brought into view. One who violently opposed him he invited to look through the telescope, and see for himself. "No," said his adversary; " should I look through the telescope, I might perhaps see them; and then I could no longer deny their existence." This well illustrates the course pursued by the opponents of phrenology. The truths of our science are sufficiently obvious; but many fiercely vituperate, yet refuse to look through the telescope.

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* Long after the labours of Harvey, when M. Dodart defended, at Paris, a thesis on the circulation of the blood, the old doctors decided, " *that the young candidate managed his subject very well, considering the strangeness of the paradox.*

† Supplement to the Encyclopedia Britannica, part ii. p. 56.

Formerly phrenology was greatly opposed by the religious portion of the community. In this country I have not witnessed much of this. Wherever the religious man places himself in opposition to natural truth, it is deeply to be regretted. All truth is from the same eternal source, whether it be the truth of Philosophy or the truth of Revelation. It is impossible to destroy a fact—it remains for ever; and in opposing it, religious men will always be ultimately found in the wrong. That is, in God's name they will be found to have opposed God's truth, and to have set variance between His word and works.

I recollect that, in my youth, I was taught to repeat the catechism of Dr. Watts,in which is this question—" How do you know you have a soul ?"—which is thus answered —" Because there is something in me that thinks and feels, which the body cannot do." This answer is founded on an illusion. It may satisfy a child, but it is palpably erroneous in the eyes of the physiologist. It rests simply on the circumstance that we are not *conscious* of the operations of the brain; yet numerous facts with which we become acquainted by means of *observation* prove that,without its agency,we can neither think nor feel—that it is in short the organ of mind. In support of this proposition I may remark,

1. If the brain be not the organ of mind, its uses are unknown.

2. It is better protected and better supplied with blood than any other part of the body.

3. The nerves of the senses are all connected with the brain: it is the recipient of all their transmissions.

4. The nerves of motion and the nerves of sensation are all connected, through the medium of the spinal marrow,

with the brain: it is the fountain of impulse and the reservoir of sensation.

5. Certain substances, as opium or ardent spirits, disturb mental manifestations by operating on the brain.

6. Fainting is a temporary loss of consciousness, occasioned by recession of blood from the brain.

But we have still more direct evidence. Richerand attended a woman whose brain had been laid bare. One day he pressed upon it a little more forcibly than usual, and the patient became silent and unconscious in the midst of a sentence. On removing his hand, consciousness immediately returned. As no pain was felt, he repeated the experiment several times, and always with the same result.* Similar cases are related by many other writers. Sir Astley Cooper relates one, of a seaman who had his skull fractured and brain compressed by a fall. For thirteen months he remained totally unconscious. On Mr. Cline raising the skull, consciousness immediately returned. The last thing the man recollected was a sea fight in the Mediterranean, thirteen months before,† in which he had received the injury.

But it may be asked how pressure on one part suspends all mental manifestations, if, as phrenologists say, the brain consists of numerous organs? Let it be recollected that the brain is composed of a pulpy mass, having numerous blood vessels ramifying in its substance, and is inclosed in membranous sacs, the pia mater and the dura mater. It may be likened to an India rubber bag filled with fluid. Now it is a law of hydrostatics, that pressure made on one part of a fluid affects all parts alike; consequently, when pressure is made on one part of the brain, all are equally affected. If the integuments be cut, so as to permit effusion of blood, total unconsciousness does not take place from a partial injury.

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* *Nouveaux Elemens de Physiologie, 7th ed.* ii. 195—6.

† *Lectures of Sir Astley Cooper* on Surgery, p. 159. Gall mentions a person who received a wound which penetrated to the corpus callosum, and whenever pus accumulated, he lost the use of the eye of the opposite side; and this blindness disappeared the moment the pus was discharged! Gall. iii. 56.

"But," say objectors, "how is it that the brain does not manifest structural derangement after death, when the individual has been afflicted with insanity?" This question was more confidently asked some years ago than now: more accurate investigations have shown that, in the great majority of cases, such derangement is demonstrable; and if it be not always the case, this is not more remarkable than what takes place in other parts, where there may be derangement or destruction of function, without the anatomist being able to discover organic change. Thus some poisons destroy life, without any structural alteration being visible in any part of the body.

Again, to show that the mind is independent of the body, it is said that the mind often fully manifests its faculties to the last moment of life, even in lingering disease. This is not true. It is important to distinguish between functional and organic derangement and simple weakness. Suppose I cut the muscles of my arm across, there would be organic derangement, completely incapacitating me from using my limb. Suppose I should bandage my arm tightly and keep it motionless for six months, at the end of that time I should be able to move it in the usual manner, but not with the usual force; the general structure would remain the same, but the size and power would be greatly diminished. So when the brain is but secondarily affected, the mode of manifestation may remain unchanged to the end of some fatal malady, but the energy will be greatly lessened. Thus, in disease of the lungs, the brain merely suffers, like other parts, sympathetically, and from badly oxygenated blood. At the commencement of the disease, the mind may act with its usual vigour. During the second month the patient thinks but little on subjects requiring mental energy;

during the third month he chooses novels or light reading; during the fourth month he prefers newspaper paragraphs, as requiring little continuous attention; and afterwards he ceases to read altogether, and does little more than answer simple questions; yet, because he answers these questions correctly, his mental manifestations are said to be unimpaired. No mistake can be greater.

Again, when a part is actively exercised, blood rushes to it with rapidity; and if the brain be the organ of mind, there should be to it a rush of blood during mental action; and this is found to be the fact, as many writers testify. Dr. Pierquin observed a patient in one of the hospitals of Montpelier, part of whose skull had been removed. In dreamless sleep the brain lay motionless within the cranium; when she was disturbed by dreams, it was agitated and protruded; in dreams reported by herself to be vivid, it was more protruded, and still more so when she was awake and engaged in active thought, or sprightly conversatian.

Every act of the will, every flight of the imagination, every glow of affection, every effort of the understanding, is, in fact, manifested by means of the brain. And this proposition is acknowledged by the greatest anatomists. "We cannot doubt," says Dr. Cullen, "that the operations of our intellect *always* depend upon certain motions taking place in the brain." Dr. Gregory remarks that "although memory, imagination and judgment appear to be so purely mental as to have no connection with the body, yet certain diseases which obstruct them prove, that a certain state of the brain is necessary to their proper exercise, and that the brain is the primary organ of the internal powers." Blumenbach, Magendie, Arnott, nay, even the Edinburgh Review, in the 94th number, as well as numerous other authorities, give like testimony.

It is worthy of observation, that the general notion of the mind's independence of the body is quite modern, the offspring in fact of philosophical theories sprung up, chiefly, since the days of Locke. Shakspeare and the older writers frequently speak of the brain as implying the mental functions; and, to the present day, the notions of the vulgar are more in accordance with nature than those of polite scholars of the old school. Thus a stupid person is called a numbskull, a thick head, or said to be addle-pated—badly furnished in the upper story: while a talented person is said to be strong-headed, long-headed—to have plenty of brains; a madman is said to be wrong in the head—touched in the noddle.

We find, then, that reason, fact, the testimony of the best physiologists, and vulgar notions, all testify that the brain is the organ of mind.*

And what does this proposition imply? Clearly that the state of the brain must greatly influence the mental manifestations, and that the perfection of those manifestations must depend on the perfection of the organ. How important, then, does the study of the brain become!

I beg to state that in Edinburgh my Phrenological course occupied fifty lectures of one hour each. Your time will not permit this. I therefore limit my lectures to sixteen. As in sixteen hours, however, I should be unable to do justice to the subject, I must beg your attendance on two hours of each evening. But, inasmuch as two hours' continuous attention would be fatiguing, I shall always pause for five minutes at the end of the first hour. And I hope you will stand up during that time, and disengage your attention from the subject. In this way you will be greatly relieved, and be enabled to bear the two hours' exertion much better, than would at first appear likely.

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* The usual termination of incurable mania proves that its immediate seat is the brain. When it continues many years, the cerebral mass is diminished, the cavity of the cranium contracts, and incurable dementia is the result. Gall, vol. ii. p. 123.

I hope you will attend faithfully to the observations which form the introduction to my course. You will, hereafter, find that they have a most important practical bearing on the subject of Education.

We next come to the question—Does the mind in *every act* employ the whole brain, or are separate faculties of the mind connected with distinct portions of the brain, as their respective organs? Is the brain single or multiplex?

That it is multiplex may be proved by a number of considerations. Analogy would lead us to this conclusion. Thus, in all ascertained instances, different functions are never performed by the same organ. We have, for instance, a distinct organ for each sense, and it appears to me clear that to feel puffed up with pride, and to feel great deference for others, are manifestations of functions as distinct as those of smelling and hearing. Some parts appear to have several functions, but, on analysing them, each function is found to be performed by its peculiar organ: thus, the tongue moves, feels and tastes; but then it contains a nerve of motion, a nerve of feeling, and a nerve of taste; and it may be deprived of any one of these functions, without the other two being impaired. But the most interesting example of distinct functions being dependent on distinct organs, is furnished by the spinal marrow. This is composed of two double columns, the anterior being appropriated to motion, the posterior to sensation. This, Sir Charles Bell clearly proved in the following manner: he cut an anterior nerve at its root in an ass, and the parts through which it ramified lost the power of motion, though feeling remained unimpaired. He cut a posterior nerve in another, and the parts through which it ramified lost the power of feeling, but retained that of motion.* Their distinctness is now universally acknowledged—and here I would make an important observation: it has been objected to phrenology, that to the organs of the brain we cannot assign distinct boundaries; that we are unable to take a brain and isolate the organs with the dissecting-knife, showing precisely where one ends and another begins. But, mark, this objection holds equally against the distinct functions of the different parts of the spinal marrow: that one part is appropriated to nerves of sensation and another to nerves of motion, no one doubts; and yet to point out the precise boundaries of the distinct nervous columns is absolutely impossible.

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* Several years before Bell's experiments were heard of, Dr. Spurzheim published the following observation. "It has been observed, that, in palsy, voluntary motion and the sense of touch are both destroyed at the same time, but that sometimes the one has ceased while the other

Different faculties of the mind appear in succession: thus, affection for the parents or nurse appears before veneration, or the sense of justice; and the power of perceiving colour and form before the reasoning power. I am told by mothers, that children manifest fear when two or three months old. If the brain be a single organ, these powers should be simultaneously developed; but this is not so, and the only true explanation seems to be, that the brain is composed of different organs, which come to maturity at different times. Dr. Johnson, indeed, remarked that the doctrine of a variety of faculties was absurd, 'for,' said he, 'the man who can walk east can certainly walk west.' But it may be remarked, that walking east and walking west are but walking—the exercise of a single function; whereas feeling fear, and reasoning, are quite distinct operations.

Again, *genius* is always *partial*, which it ought not to be

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remained. From this it has been inferred, that there are two sorts of nerves. Anatomy has not yet demonstrated them, but I believe them to exist, for the following reasons. The same nervous fibres do not go to the muscles and to the skin, and each of these parts has a distinct function. The nerves which are necessary for voluntary motion cannot propagate the sense of touch, nor the latter the impressions of movement," &c. *Sur la Folie*, p. 26, Paris 1818, and before in his physiognomical system, 1815.

if the organs of the mind were single.* I have seen it maintained, in one of your periodicals, that genius is the result merely of an accidental exciting cause. Thus, Newton was made a philosopher by the fall of an apple, and Byron became a great poet because he was lashed by the reviewers and condemned as a poetaster. But like causes produce like effects, and how happens it that so many millions, before Newton, had seen apples fall without ever thinking of any thing but picking them up and eating them? And if a lashing be sufficient to produce a great poet, why are not great poets more numerous? Indeed, if critical abuse had been sufficient, I should by this time have become a great poet myself.

Dreaming can be rationally explained by phrenology alone. Were the brain a single organ, then would all its faculties be asleep or awake together, and, consequently, dreaming be impossible. But this is not so. Cautiousness alone is sometimes awake: then are conjured up all fearful thoughts, and the dreams are of 'hydras and chimeras dire.' On the other hand, a number of the intellectual faculties may be awake and the sentiments asleep: then we may have a vision of friends long dead, but totally free from that awe or fear which their presence would inspire were not the feelings dormant.

Were not the brain a congeries of organs, partial idiocy could not occur; yet, that it does occur we well know. Here is the cast of an idiot whose intellectual faculties were extremely small, but whose self-esteem was large; and notwithstanding his utter imbecility, he had a very comfortable opinion of his own importance. I knew an idiot on the banks of the Clyde, who could play on one or two musical instruments, yet, in other respects, he was so utterly imbecile that he had to be supported by the parish. An idiot in Liverpool, named Jones, manifests great facility in learning languages; show him a passage in the bible, and he will point out and read the parallel passage in seven or eight other languages. But about the meaning he has no idea. Now if the brain were a single organ this would be the same as if a man had the power of walking east, without having the power of walking west.

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* "Genius ordinarily commences its great works, as it were by instinct, without being aware of its own talent." Gall. i. 158.

Indeed, that the brain *must* consist of a congeries of organs, is maintained by distinguished physiologists otherwise opposed to phrenology; as Foderé, and Sir Charles Bell. Such considerations as I have stated, have impressed men, in all ages, with belief in the brain's multiplex character; and particular portions of the head have been assigned to distinct faculties, from the time of Aristotle. This drawing represents a head published at Venice in 1562, by Ludovico Dolci. Now what is the difference between such an arrangement and the system of Gall? Simply this:—Gall discovered the seat of the various faculties. These elder writers considered *modes* of activity as simple faculties, and located them according to a fancied propriety. Here, in the front, they placed *common sense*, because it seemed the most appropriate place for receiving information from the eyes, nose, and taste. *Fancy* they placed on the sides of the head, because it has such great facility in flying off in a tangent. *Reflection* they placed at the back of the head, because, in reflecting, men throw the mind back on itself. *Memory* they placed in the cerebellum, because they thought it formed a nice little store-house for the safe and snug keeping of ideas till they were needed. This, you will observe, was *making* man, not *observing* him.

The brain, then, is not a single organ, but each particular function is manifested by a particular portion of the brain.

LECTURE II.

In the last lecture I stated reasons for believing that the brain is the organ of the mind, and that each distinct fundamental faculty is manifested by a distinct cerebral organ. We now come to inquire whether the condition of the brain exercises any influence on the manifestations of mind. Does it matter, in short, whether the brain be old or young, healthy or diseased, fine or coarse, small or large?

It is certain that a young and immature, or an old and shrunken brain cannot manifest its functions with the vigour and continuity of one in the heyday of life. Thus we see the feebleness of childhood and the imbecility of age. Usually at sixty or sixty-five the painter's touches become feeble, and the poet's fire darkened.* The influence of disease we observe in insanity and other affections.

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* "We are told of octogenarians, nonagenarians, and centenarians, with their mental faculties unimpaired! as well might we be told of such individuals, with the bloom and elasticity of corporeal youthfulness unimpaired. Men very far advanced in years often manifest much sprightliness, and sufficient vigour, *for a short period*. But it is *necessarily* short. Exhaustion overtakes them, and compels them to pause, or stop entirely, until their strength is renovated, when they again proceed. In the last years of their lives, Mr. Jefferson and Dr. Priestly furnished striking examples of this. At table, and elsewhere, their mental powers would exhibit themselves *briefly*, with the apparent vigour and freshness of youth. But exhaustion soon came and constrained them to be silent—sometimes to slumber for a few minutes, when they would wake and join again in sprightly conversation. When in the vigour of life, these two individuals could have maintained for *many* hours the same degree of mental exertion, which, near its close, would have exhausted them in *half an hour*. And of every one bowed down with years the same is true." Dr. Caldwell, Annals of Phren. 1835, p. 409.

It is the opinion of phrenologists that *size*, other things being equal, is the measure of power—that is to say, age, health, exercise, and temperament being the same in two individuals, if in one the mental organs be small, and in the other large, the latter will manifest mind most powerfully.

You have all read the pleasing fable of the old man who showed his sons a bundle of rods, and pointed out to them how readily they might snap them asunder separately, but how difficult it was to break the whole at once. Whence arose this difficulty? Clearly from the added rods or fibres producing additiónal resistance: so it is with living parts. A muscle is strong in proportion to the number of its fibres; so is a nerve. But suppose an objector to present a rod of iron of the same thickness as one of the wooden twigs, and insist that to break that single rod was as difficult as to break the whole bundle of twigs before referred to. The answer is obvious. Here the things compared differ in kind and quality. The condition, that size is a measure of power, *other things being equal*, has been entirely overlooked. Take ten iron rods of like thickness, and you will find, as in the former case, that it is ten times as difficult to break ten rods as to break one.

The bee has a very minute brain, and yet it manifests great constructiveness. Now it may be argued, that if size be a measure of power, then should the comparatively enormous organ of constructiveness in man, cause him to manifest the faculty with proportionate energy, which is not the case. But this objection is unsound. The structure of every species of animal is modified to suit its condition, and you can no more compare a bee with a man, than a twig with an iron rod. Correct conclusions can be obtained only by comparing animals of the *same species*. It is to be observed, however, that the more nearly any two species resemble each other, the fitter they become for profitable comparison. Thus, the heads of the cat and tiger, correspond more closely with each other, than those of the tiger and sheep; hence, too, by comparing man with the higher animals, analogy throws on human organization a reflected light, which serves admirably for illustration, though not for proof. Direct observation on man himself is the only evidence on which phrenologists depend, and on such evidence alone their science rests.

All animated nature teems with proofs that size is a measure of power. Large lungs aërate blood better than small ones, and large muscles are more powerful than small ones. If a liver with a surface of ten square inches, secrete four ounces of bile, it is certain that, other conditions being equal, a liver with a surface twice as great would secrete twice as much. Bones are large in proportion to the weight they have to support: hence their enormous size in the elephant and the mammoth, a complete specimen of which I saw at Philadelphia—and their strength is always in proportion to their size, other things being equal. But suppose the arrangement of the bony matter to differ, then may the same quantity produce different degrees of strength. Thus, if you wished to place an iron pillar weighing ten tons in the centre of this room, for the purpose of supporting it, the strength of the pillar would be much greater if you disposed the matter in the cylindrical, than if you disposed it in the solid form. So when nature wishes to give strength to the bones of birds without increasing weight, the bone is made of large diameter, but hollow in the middle. It would not do, therefore, to compare equal quantities of bone, in one case compacted and in the other arranged cylindrically, inasmuch as the conditions would not be equal. But of two cylindrical bones, containing matter in proportion to their size, the largest would be the most powerful. And of two compact bones, the same would hold good.

We have striking confirmation of the principle I am advocating, in the relative distribution of the different kinds of nerves. Speaking generally, there are two classes of nerves, those of motion and those of sensation. Now wherever the power of motion predominates in an animal, there are the nerves of motion most numerous; and where-ever the power of feeling predominates, there are the nerves of sensation most numerous. Thus, in the horse, which is noted for its muscular power, the nerves of motion going to the limbs are one third more numerous than those of sensation. Whereas, in man, distinguished for acuteness of feeling, the nerves of sensation are one fifth more numerous than those of motion. The nerve of feeling going to the elephant's proboscis, and ramified on its tactile extremity, exceeds in volume all the muscular nerves of that organ put together. Birds require to rise in the air, which is a medium much lighter than their bodies: Nature, therefore, to avoid enlarging their muscles,and thus increasing their weight, has bestowed on them large nerves of motion. Power is thus secured by applying a strong stimulus to muscles comparatively small. In fishes, on the contrary, which live in a medium almost equal in density to their own bodies, the muscles are comparatively large, and the nerves small. Thus does nature beautifully adapt the structure of the animal to its condition.

We find this adaptation well illustrated by the external senses. Each of these senses is composed of an instrument on which the impression is made, and of a nerve to conduct that impression to the brain. Now a large eye will evidently collect more rays of light, a large ear more vibrations of sound, and large nostrils more odorous particles, than the same organs if small. And the nerves, ramified in these organs, give intensity of perception proportionate to their extent. The organ of vision affords a most interesting example of this. A large eye collects a greater number of rays, and, consequently, commands a greater sphere of vision than a small one. The ox is remarkable for the size of his eye; (hence the term 'ox-eyed,' applied to large-eyed individuals;) he consequently commands a large range of space without turning round; but, as his provender lies at his feet, his sight need not be acute: accordingly, we find that the optic nerve is not large in proportion. The eagle, on the contrary, soaring as it does to an immense height, needs not a large eye to give it range of vision, but it needs intensity of vision, that it may perceive its prey at a great distance. We find its eye, therefore, of small size, but of great keenness: the optic nerve is enormously large. It does not, as in man, form a mere lining membrane to the posterior chamber, but, according to Des Moulins, is composed of folds hanging loosely into the eye, and augmenting largely both the nervous surface and nervous mass, giving that great intensity of vision, which particularly distinguishes this bird of prey, and enables it to discover its quarry at immense distances.*

The external ear is for the purpose of collecting the vibrations of sound, and we find the lower animals to have large trumpet-ears, which man imitates, when he wants to hear distinctly, by using an ear-trumpet.

In man, the olfactory nerves spread over twenty square inches; in the seal, over one hundred and twenty—and in this animal the sense is so acute that the hunters have to approach him in the teeth of the wind. There are two dogs, the greyhound and pointer: the first follows the game by its eye, and the last by its smell. The nose of the first is narrow and pointed; that of the last broad and extended. The sheep excels man in the acuteness of smell, and accordingly, while in it the nerve is thicker than this pencil, in man its size is not greater than pack-thread or a thin whip-cord. The mole is remarkable for the acuteness of its smell, and the nerve is very large. It is remarkable for the feebleness of vision—thus, 'as blind as a mole' is a common saying. Corresponding with this is the smallness of its optic nerve.

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* Des Moulins is incorrect. On a retina so constructed it would be impossible for the rays of light so to arrange themselves as to form a perfect image. What he calls folds of the retina, are nothing more than the MARSUPIUM, a membranous, puckered, fanlike body, which arises from the back of the eye, passes through a division in the retina, and is inserted into the vitreous humour, not far from the foremost or inner edge of the crystalline lens, out of the way of direct vision. The marsupium is thin, vascular and erectile, and assists in so affecting the position of the lens, as to accommodate the eye to variations of distance.

With the aid of my ingenious friend Dr. W. C. Wallace, I recently examined the structure of the eagle's eye, and therefore give the above correction with confidence. The principle in the text is not, of course, affected by this anatomical error.

Lord Jeffrey, in an article which he published in the Edinburgh Review, opposed this doctrine, of size being a measure of power. "The proposition," he says, "*is no less contrary to the analogy of all our known organs, than to general probability.* Grandmamma Wolf, in the fairy tale, does, indeed, lean a little to the phrenological heresy, when she has *large eyes to see the better.* But with this one *venerable* exception, we rather think that it has never been held before, that the strength of vision depends upon the size of the eye, the perfection of hearing on the magnitude of the ear, or the nicety of taste on the breadth of the tongue and palate."

Now it happens that so far as the weight of authority is concerned, the venerable grandmamma Wolf has complete advantage over Lord Jeffrey, and fairly beats him out of the field—Sœmmering, Cuvier, Monro, Blumenbach, Magendie, Georget and a host of others, taking her side in the controversy. Blumenbach says: "While animals of the most acute smell have the nasal organs most extensively evolved, precisely the same holds in regard to some barbarous nations. For instance, in the head of a North American Indian the internal nostrils are of an extraordinary size. The nearest to these in point of magnitude are the internal nostrils of the Ethiopians." Monro primus says: "The sensibility of smell is increased in proportion to the surface; this will also be found to take place in all the other senses."

Suppose that, after these expositions, I were to tell you that size has no influence on power in the human brain—would you be disposed to credit the assertion? I think not. Here is the skull of an infant; here one of an adult—mark the difference in size. This is the skull of a Swiss; this of a Hindoo—see how large the one compared with the other—and what says history of their manifestations of power? While the one people achieved their independence at an early day, and have maintained it at times against fearful odds, the other have ever been the prey of invaders, and one hundred millions of them are at this moment kept in subjection by forty or fifty thousand Englishmen. Before studying phrenology this last fact was utterly inexplicable to me. The Hindoos are considerably advanced in the arts of civilized life. They have written language, systems of law and religion. And yet, they are utterly unable to contend against a mere handful of Anglo-Saxons. But now the reason is plain, the small comparative size of their brain explains their feebleness. Again, here is the head of a Peruvian Indian, a fair specimen of the race; see how small compared with the European head; and you know that a few Spaniards conquered a nation of them.

But again, when the brain is below a certain size, idiotism is the invariable result. In the lowest class of idiots, the horizontal circumference of the head, taken a little higher than the orbit, varies from 11 to 13 inches; in a full-sized head, the circumference is 22 inches; in Spurzheim's skull it is 22¼. In such idiots the distance from the root of the nose, backwards over the top of the head to the occipital spine, is only 8 or 9 inches; in a full sized-head it is 14; in the skull of Spurzheim it is $13\frac{6}{10}$. Let those who deny the influence of size reconcile these facts with their belief. We challenge them to produce a man with a small sized head, who manifests great general mental power.

"But," say some, "we know idiots who have large heads." Our reply is—so do we; but, then, in these cases, the brain is not healthy. A large leg is usually indicative of strength; but this is not the case when the leg is large from disease. But though disease be absent, if the size of the brain be very deficient, idiocy is invariable, and men remarkable for great force of character, as Bruce, Cromwell, Bonaparte, Franklin, and Burns, invariably have heads of unusual magnitude.

But here allow me to save you from error. Many, after hearing this statement, immediately commence to try on the hats of their acquaintance, and are apt to conclude that the man with the largest hat is the most clever. Now, here is a little bit of a mistake. The hat is the measure only of the head's circumference in a part of which he need not be so proud. It does not measure a great part of the intellect, and none at all of the moral sentiments. Hatters, in seeming anticipation of moral improvement, have left in the upper part of our hats, ample room for the moral sentiments to sprout and grow. Sir Walter Scott's hatter told me, that the hat of that celebrated individual was one of the smallest which went out of his store. But then the perceptive faculties, which were large in Scott, were not reached by the hat. The upper and lateral portions of his forehead were only full. Cautiousness was little more than moderately, and concentrativeness only moderately developed; and these organs, taken collectively, determine the circumference of the hat. His forehead and coronal region towered high. His head, from the ear to veneration, was the highest I ever beheld; but of these dimensions his hat gave no account.

That size has an important influence on the power of manifestation, is now admitted even by the Edinburgh Review. In the 94th number appeared a paper written by Dr. Connolly, containing this sentence: "The brain is observed progressively to be improved in its structure, and, with reference to the spinal marrow and nerves, *augmented in volume* more and more, until we reach the human brain, each addition being marked by some addition to, or amplication of, the powers of the animal—until in man we behold it possessing some parts of which animals are destitute, and wanting none which they possess."

The principle for which we contend being thus established, we would remark that it is susceptible of a most important application. It is found, in four cases out of five, that in insanity the nature of the derangement bears direct reference to the predominant organ or organs. Some are affected with melancholia; in these the organ of cautiousness will be found large. Some fancy themselves the Deity: in these, self-esteem will be found predominant. Some are furious: in these destructiveness will be found large. These are generally cases of functional derangement; and by examining the heads of the insane, I can generally determine with accuracy the nature of their derangements. But a small organ may become diseased, and sometimes does so. Most frequently, however, the derangement is structural: thus, I have seen a small organ deranged by a spiculum of bone growing into it, and by the pressure of a fungous deposition.

Let us now inquire into the circumstances which modify the effects of size. The most important of these is the *constitution* of the brain; and the question naturally arises—do we possess any means of ascertaining this constitution? We do, in the observation of what are called the temperaments, which are four in number—the lymphatic, the sanguine, the bilious, and the nervous—each of which is accompanied by a different degree of activity in the brain. The temperaments are supposed to depend upon the condition of particular systems of the body: the brain and nerves being predominantly active seem to produce the nervous temperament; the lungs and blood-vessels being constitutionally predominant, give rise to the sanguine; the muscular and fibrous systems being predominant, give rise to what is called the bilious, but which should be called the *fibrous* temperament; and the

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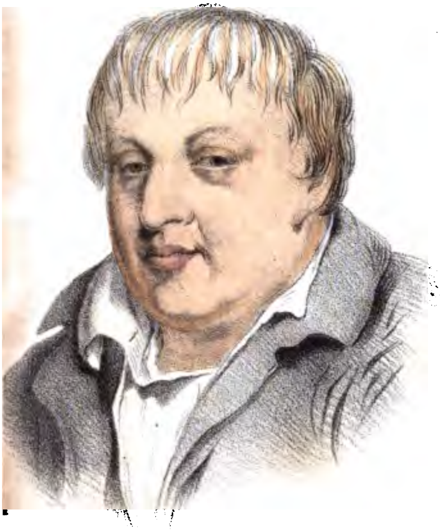

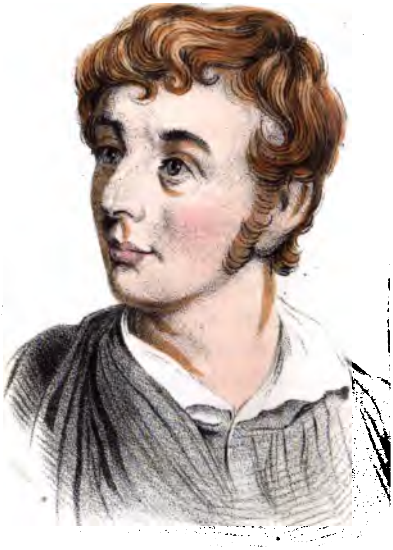

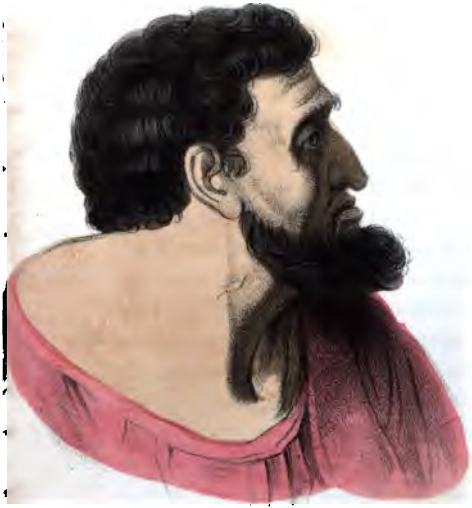

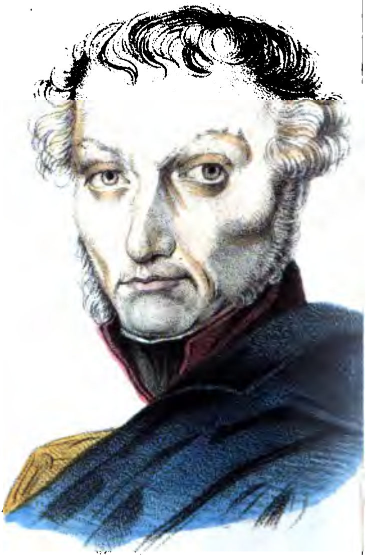

predominance of the glands and assimilating organs give rise to the lymphatic.

The temperaments are indicated by external signs:*

1. The *lymphatic* is indicated by roundness of form, softness of muscle, fair hair, pale skin, sleepy eyes, and inexpressive face. In this temperament the brain, and all other parts of the system, are feeble in action, slow and languid. The system seems one great manufactory of fat, and has the appearance of an over ripe gooseberry.

2. The *sanguine* is indicated by a well-defined form, moderate plumpness, firm flesh, chesnut hair, blue eyes, and ruddy, fair complexion. There is great fondness for exercise and intolerance of muscular quiescence. The brain partakes of the general activity.

3. The *bilious* is indicated by black hair, dark skin, moderate stoutness, firm flesh, and harsh features. It gives great power of *endurance*, or bottom, as the jockeys call it.

4. The *nervous* is indicated by fine thin hair, small muscles, thin skin, paleness of countenance, and brightness of eye. This temperament gives great vivacity of mental action.†

These temperaments are, however, seldom found pure. We have a mixture of the nervous and bilious as in Lord Brougham, giving great activity and endurance. As an example of Brougham's power of continuous activity, I may mention a circumstance, which I have heard mentioned

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[*] See Plate of the temperaments.

[†] One of the great causes why men of talent frequently leave no gifted posterity, is, that they form alliances with women of low temperament, in whose inert systems their vivacity is extinguished; and, on the other hand, the cause why men of genius often descend from fathers in whom no trace of etherial qualities can be discovered, is, that those men were the fortunate husbands of women of high temperament, and fine cerebral combinations, who transmitted these qualities to their offspring. Ed. Phren. Jour. No. 31.

The effects of temperament pervade all parts of the body; and hence a fine or coarse skull or skin, is an indication that the textures of the brain and the nervous system, and of the muscles are similar. Ibid.

among his friends in Edinburgh. Brougham was engaged in a Court of Law all day; he went from the Court to the House of Commons and remained there till two in the morning; on going home he wrote an article for the Edinburgh Review, by the time of finishing which he went to the Court; from the Court he again proceeded to the House of Commons, where he remained till some time in the morning —and it was not till the morning of the third day that he retired to bed. During all this time his vigour seemed unabated.

The nervous and lymphatic temperaments are not unfrequently combined: this gives alternations of great activity and indolence. It was the combination of Professor Leslie. He would for a day or two apply himself with great vigour, assiduity and success, to scientific studies; it would then seem as though the nervous energy were exhausted, and the nutritive system came into predominance; he would sit and eat, and dose and sleep—paying no attention to study for a considerable interval. He would often take a day to go about and attend to any matters not requiring much mental exertion; again would the nervous system come into predominance, and again,for two or three days, would he apply himself most assiduously to study. Of the lymphatic or even nervous lymphatic temperament, I have found few instances in this country. They are more common, however, in Philadelphia than in this city, but not nearly so common there as in Europe.

The nervous and sanguine temperaments both give activity; but the first is more of a mental, and the last more of a physical character. The nervous is a grave, thoughtful temperament, the sanguine is accompanied with an appearance of hilarity and hope, there is a peculiar lighting up of the countenance, and tendency to motion. One of the former temperament would rather write a note than walk across the floor; one of the latter would rather walk the length of Broadway than write a note.

Shakspeare admirably contrasts the lymphatic and nervous temperaments in the scene between Cæsar and Antony:

Cæsar. Let me have men about me that are *fat*—
Sleek-headed men, and such as sleep o' nights.
Yond' Cassius has a *lean* and *hungry* look:
He thinks too much—such men are dangerous.
Antony. Fear him not, Cæsar; he's not dangerous—
He is a noble Roman, and well given.
Cæsar. Would he were *fatter*—but I fear him not;
Yet if my name were liable to fear,
I do not know the man I should avoid
So soon as that *spare* Cassius.

It is to be remembered, then, that a large brain may, in fact, be less active than a smaller one if its temperament be inferior. But in judging the relative power of organs, temperament need not be considered, as all the organs of the same head are of the same temperament.

In cases of disease great size may be present, and yet the manifestations of mind may be very feeble and imperfect. In this case, size forms no measure of power any more than in the case of a leg affected with dropsy.

Now, if the brain be the organ of mind, and different parts of the brain manifest different faculties, it cannot be indifferent what part is most or least developed, for it is obvious that two brains may be composed of precisely the same quantity of cerebral matter, and yet manifest totally different qualities. The *form* of the head, therefore, is not less interesting and important to phrenologists than the size. Before proceeding further with the consideration of this subject however, let us glance at the means which have been used by those inquirers who have preceded Dr. Gall, to ascertain the true philosophy of mind and functions of the brain.

By one set of philosophers, the laws of thought have been expounded without any reference to organization. Such were Locke, Hume, Reid, Stewart, and others. They reflected on their own consciousness, and they inform us of the result of their investigations, what they have thought and what they have felt. Consciousness does not inform us that the mind manifests itself by means of organs at all, and the connection of the brain with the mind forms no part of their philosophy.

With the hope of obtaining some information concerning the functions of the brain, the anatomists have cut it up in every possible direction, but no sentiment was ever perceived slumbering in its fibres, nor half-formed ideas starting from its folds. In fact a dissection never yet disclosed the functions of any part whatever. Formerly it was very prevalent in France to cut out parts from the brains of living animals, in order to ascertain functions; a practice as absurd as it was cruel. The experimenters proceeded on the supposition that nothing was known concerning the functions of the brain, and yet they expected to ascertain functions, by observing what powers were *not* manifested when various parts were destroyed. Suppose a musical instrument were presented to one of these operators, and that his object was to discover, by experiments, what sounds it was capable of producing, and by what part of it each sound was emitted. Imagine him to take a hammer and smash, at random, a number of its springs and wheels, and then set the machine a-going. By listening to the sounds emitted, how could he tell *what were wanting*, when he did not know the whole originally within its compass? and how could he tell by their silence, the sounds which the broken strings were originally calculated to emit. Yet this would be precisely analogous to the procedure of the vivisectors. They are unacquainted with the number of the mental powers, and they destroy several of them at random, that they may find it out. They do not know what particular power is manifested by any particular part of the brain, yet they destroy the part to get it to reveal its function. They break the string of a musical instrument, and then listen to hear what sound it will not emit!

We hear of Magendie, and others, cutting away certain portions of the brain in various animals, and that some animals, went forwards, some backwards, some to the right, some to the left, some seemed drunk, some stupid. And then from these experiments, a number of so-called important deductions were drawn. But how can deductions, fit to be depended on, be drawn from the actions of animals so tortured? Suppose you take a beautiful blackbird and cut through its integuments and skull, and take out a portion of its brain, do you think it would favour you with a song? And because it did not, would you be correct in calling the excised portion of brain the organ of tune? Suppose you take another animal, and serve it in like manner, do you think it would be in the humour or condition to tend and nurture its young? And because it did not, would it be correct to say that the excised portion was that which manifested love of offspring? Had phrenology been based on such observations, then would it have merited all the obloquy which has been heaped upon it. But because such cruel experiments have been performed to overthrow phrenology, they have been lauded as most philosophical!

Again, pathological cases have been brought forward to illustrate the functions of the brain; and sometimes to oppose phrenology. Now, before you can draw any conclusion concerning the function of a part from a state of disease, you must know the function of the part in health. But as the non-phrenologist is ignorant of the situation of particular organs, he cannot tell, when a certain feeling is deranged, in what organ to look for disease. Nor. when he sees morbid appearances in an organ, what faculty was probably deranged. To illustrate my meaning, I relate the following circumstance.

Mr. N——* was a man highly respected for talent and character: he was at one time minister plenipotentiary to this country, and at another to the court of Constantinople. He lived to the age of ninety-three. Seven years before his death his character commenced to undergo a remarkable change; from being one of the most amiable and courteous, he became one of the most violent of men. He abused his aged gardener, spit in his face, and threw things at him. He also from being an admirable linguist became unable to use words. When he died, Dr. Abercrombie and Mr. Craig examined the brain, and Mr. N—, being connected by marriage with a near relative of mine, I was invited to attend. The medical gentlemen knew, by means of their intercourse with Mr. N—, that he had lost the use of words; but they did not know, which I did, of the change of his temper. They found an abscess, one inch in length by half an inch in breadth, in the posterior lobe where Combativeness is situated. They conceived this lesion to be connected with his loss of words. I regarded this as connected with his change of temper, and expected to find another injury in the anterior lobe. When Mr. Craig came near the organ of language, I begged of him to dissect carefully. I was an abscess there before he discovered it, I took the probe, and pointed it out to him; he unfolded it, and it was in the line of the fibres of the organ of language. Mr. Craig published an account of the case, in which he mentioned the large lesion and connected it with the loss of words; he had been unacquainted with the furious conduct of Mr. N. I immediately published another report, stating the conduct of the patient in this respect, and showing clearly the manner in which the post mortem appearances harmonized with phrenological doctrines. I repeat, that a non-phrenologist is incapable of reporting pathological cases of the cerebral organs with success.

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* Mr. Combe, for the sake of authenticity, mentioned the name,

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which I deem it proper on this, and like occasions, to suppress, lest pain should be given to individuals in private life with whom the parties mentioned were connected by the ties of blood or friendship.

Dr. Roget, an opponent of phrenology, confesses, that "the brain is still as incomprehensible in its functions, as it is subtle and complex in its anatomy." Dr. Conolly, in the 94th No. of the Edinburgh Review, well describes the utter confusion of the anatomists and physiologists, even in late years, when trying to unravel the mysteries of the brain.

It is plain, then, that if Dr. Gall could boast no superior method to that of ordinary physiologists and metaphysicians, he would have been unable to solve the question, What parts of the brain and what mental faculties are connected? He was led, however, to adopt a different and superior mode of inquiry, which will be best explained by relating briefly the history of his discovery.

Dr. Gall, from an early age, was given to observation and was struck with the fact, that each individual was distinguished for some peculiarity of talent or disposition. Some of his schoolmates were distinguished for the beauty of their penmanship, some for the elegance, others for the stiffness and dryness of their style of composition. Their dispositions were equally different; and this diversity appeared to determine their partialities and aversions. Some manifested a fondness for employments which they were not taught. Some would spend their leisure in painting, some in cultivating a garden, some in carving, some in noisy games. Each individual presented a peculiar character, and Gall observed, that an individual who one year had displayed selfish or knavish dispositions, never became in the next a good and faithful friend.

The most formidable rivals of Gall, at school, were such as learned by heart with great facility; and these he noticed had prominent eyes; they gained from him, by their repetitions, the places which he had obtained by the merit of his original compositions. Some years afterwards he changed his residence, and he still found that his school-fellows, so gifted, had prominent eyes. He made the same observation on entering the University. Gall could not believe this connection to be purely accidental, but suspected that they stood in an important relation to each other. After much reflection he conceived, that there might be external signs for the other intellectual powers, and thereafter all individuals remarkable for any mental quality became the objects of his attention. Light broke in upon him by an almost imperceptible induction, and by degrees he conceived himself to have found external characteristics, indicative of a decided disposition for painting, music, and the mechanical arts.

In following out the principle which had thus presented itself to his mind, he encountered great difficulties. The prevailing notions of the philosophers and physiologists were a continual stumbling-block, till abandoning every theory and preconceived opinion, he gave himself up to the study of nature. He visited prisons and schools, was introduced into the courts of princes, to colleges and the seats of justice, and visited every individual remarkable for any particular endowment. During my recent visit to Vienna, I was informed that such was the ardour with which Gall pursued his inquiries, that he created alarm ; people when dying were afraid lest Gall should obtain their skull, and some left orders in their wills that means should be taken to prevent him.

On reflection, Gall was convinced that, without anatomy, physiology must be imperfect ; and although he had always supposed the external indications to depend on the brain, he had not gone beyond other anatomists in explaining its structure. But observing a woman afflicted with hydrocephalus, who manifested an active and intelligent mind, he declared that the structure of the brain must differ from what was generally conceived. From that commenced his anatomical discoveries. Gall did not first dissect the brain and thus pretend to discover the mental organs, nor did he first map out the skull according to his imagination. On the contrary, he first observed a concomitance between particular talents and dispositions, and particular forms of the head; he next ascertained, by the removal of the skull, that the size and figure of the brain are indicated by external appearances; and it was only after these facts were ascertained, that the brain was minutely dissected and light thrown upon its structure.

Dr. Gall, for the first time, delivered lectures on his system in 1796, at Vienna; in 1800, Dr. Spurzheim became a student of his, and in 1804, his associate.

When I was in Germany, I saw a collection of books describing the science at different stages of its progress, and also skulls marked at different times; all proving that the organs were discovered in succession. Indeed, I found in this country a most unexpected corroboration of the fact. Mr. Nicholas Biddle, when a young man, and on a visit to Europe, in 1806, attended a course of Dr. Gall's lectures, and was so much interested that he requested Dr. Spurzheim to mark out the places of the organs on the skull, which the Dr. did. When in Philadelphia, Mr. Biddle presented me with the skull so marked, saying, that I could make a better use of it than he. This is it, and you perceive that there are a number of unoccupied places. You perceive that Hope, Conscientiousness, Individuality, Concentrativeness, Time, Size and Weight, are not marked upon it, they, at that time, being unascertained.

So far indeed was Gall from advocating a hypothesis, that in the disjointed items of information which he first presented to the public, there appears a want of ordinary regard for systematic arrangement. A candid and uncoloured statement of facts was all he seemed desirous of furnishing, leaving their value to be ascertained by time and farther investigation. But gradually a system of mental philosophy emanated, almost spontaneously, from the seeming chaos.

LECTURE III.

In order that we may successfully investigate mental powers by means of organization, we must be able,

I. To discover the mental qualities of individuals from their actions.

II. To ascertain the size of the brain during life. Let us see whether these things are practicable.

It is worthy of remark that men familiar with human life and conduct have ever had much practical knowledge of the philosophy which we teach, while metaphysicians have been wandering in the dark. They have observed that one person is very covetous, another cruel, another benevolent, another proud, another vain; that some have a passion for poetry, some for music, some for sculpture, some for the mechanic arts. In their intercourse with society they act on these observations and try to move men to certain courses of conduct by very different appeals. To the covetous they describe the profitableness of the act which they wish him to perform; to the benevolent its kindness; to the vain its praiseworthiness. They feel assured, too, that these dispositions are natural, uniform, and permanent, and never expect that a man prone to covetousness to-day will to-morrow become very benevolent; that to-day an individual may be deaf to the voice of censure, or of fame, who yesterday was tremblingly alive to every breath that was blown upon his character.

As to intellectual endowments, these cannot be similated. To produce a Catalani's burst of melody, you must possess the faculty of music; to send forth the splendid eloquence of a Chalmers, you must be gifted with his ideality. To fathom, like Newton, the profundities of science; to soar, like Shakspeare and Milton, beyond the boundaries of sublunary space, requires a mind far different from that which can scarcely grope its way through the daily occurrences of life, or which sees no glory in the heavens, and no loveliness on earth. 'He has a genius for music;' 'he has a genius for painting;' 'he has a genius for nothing,' are common expressions, and express the convictions which experience has produced. Men believe, doubtless, that education may *improve* any faculty—but not that it can *produce* genius; whereas great genius cannot be wholly hidden by any accumulation of difficulties. It is observed, doubtless, that one who seems dull at ten, may be a genius at twenty—because a child has not the full-grown powers of a man. But it is not imagined that every boy may be made a genius by any education or in any length of time.

We acknowledge that different individuals may follow a line of conduct, the same in external appearance, from different internal motives; and that seemingly virtuous deeds are often performed under the influence of selfishness and cunning. For example, there were two girls, Mary and Jane, walking in an orchard, and they saw two fine apples lying on the grass. Mary was about to pick them up, give one to her sister and eat the other herself. But Jane checked her and remarked, that as the fruit in the orchard belonged not to their father but to his tenant, they had no right to the apples, and it would be wrong to take them. Such conduct would be considered as indicative of a nice sense of justice, and rare strictness of moral conduct. But mark these little girls; they go home, and as soon as Mary has sat down to work, Jane steals out, picks up the apples, and eats them both herself. Now her conduct presents a very different aspect, and indicates a disgusting combination of cunning, dishonesty and selfishness. Had you formed your opinion of her character from a partial knowledge of her conduct, that opinion would doubtless have been very erroneous. You need therefore to exercise a rigid scrutiny in forming your opinion, but from such scrutiny few indeed are able to veil their true dispositions; and if there be persons who do possess this power of dissimulation, it forms the predominant feature in their mental constitution; and, as will afterward be shown, is indicated by a particular form of organization.

I venture to conclude, then, that the first point is established in favour of phrenology. Let us now inquire whether it be possible to discover the *true form of the brain* by observing the form of the head. But first allow me to make a few remarks on the formation and structure of the brain.

In forming animals, Nature seems to have proceeded with as much uniformity as in forming the solar system. We find animals continually increasing in intelligence, and as we proceed up the scale, 'the brain,' to use the words of Dr. Conolly, in the Edinburgh Review, 'is observed progressively improved in its structure, and, with reference to the spinal marrow and nerves, augmented in volume more and more, until we reach the human brain.' And it is a remarkable fact, that man seems to pass through every gradation of animal existence. His heart is at first a mere pulsating vessel, like that of an insect; then a sack like that of a fish; then two sacks like that of an amphibious animal; then a regular double heart. So the human brain at one period presents appearances analogous to the brain in fishes; then to that of birds; then to that of the mammalia; and finally becomes, by the addition of new portions, a proper human brain, and is such at birth; and according to Sœmmering, has no convolutions till the sixth or seventh month of gestation, being in this respect like the brain of mature fishes and birds in which convolutions are never found. Convolutions then begin to appear and gradually enlarge to adult age.

Atheists have taken advantage of these facts to maintain that man is merely an improved edition of an animal.

Now this is not correct; for besides having all that the animal possesses, he has parts which it does not possess: he is endowed with moral sentiments and reflective faculties; and it would be just as correct to say, that a locomotive steam-carriage is an improved edition of a wheelbarrow, because both have two sides, a bottom and a top.

The brain comes to maturity at different ages in different persons—seldom before the age of twenty, and sometimes, according to Gall, not before forty. My own observations prove, that it generally continues spontaneously to grow to twenty-three years of age, and sometimes to twenty-eight.

A good-sized, mature brain in man weighs 3 lbs. 8 oz.; in women 3 lbs. 4 oz. The brain of distinguished men is often very heavy: Cuvier's weighed 3 lbs. 10 oz. 4½ dr.

The brain is a mass of soft matter, incapable of feeling pain on being injured. It consists of two hemispheres or halves, which are separated from each other by a membrane called the falciform or scythe-shaped process; each hemisphere is divided into three lobes, the anterior, middle and posterior. This last division is to some extent artificial; for though the divisions partially exist, as you perceive on looking at the base of this cast, on the superior surface you see no such divisions. Then there is the cerebellum or little brain, situated beneath the posterior part of the cerebrum or true brain, and separated from it by a membrane called the tentorium. There are in fact two brains, just as there are two eyes or two ears, each hemisphere being capable of independent action, but united to its fellow at the bottom of the medial cleft by a commissure or connecting part. On the surface of the brain, as you perceive, there are waving lines: these are the convolutions. They vary from half an inch to an inch in depth. I have said that in the lowest animals convolutions do not exist. We do not find them in fishes, nor in birds, nor in the lowest of the quadrupeds, such as the rat and mouse. As we proceed up the scale, they commence and increase in size and number. Every one must have been struck with the difference, as to docility, between dogs and cats. Accordingly, Des Moulins estimates the convolutions of the dog to exceed six or eight times those of the cat. The ape has more large and numerous convolutions than the dog, though some dogs are scarcely inferior to the higher order, even of apes, in this respect. The most marked superiority exists in the apes of the old world over those of the new, as is well known; and there is a corresponding difference in the convolutions. It was stated by M. Bérard that none of the gentlemen present at the dissection of Cuvier's brain remembered to have seen one so complicated, or with convolutions so numerous and compact, or with such deep anfractuosities; these last were stated as an inch deep. Atrocious criminals have been noticed to have very small, narrow and shallow convolutions in the moral regions.

According to Haller, the brain is supplied with one fifth of all the blood in the body; according to Dr. Monro, with one tenth. In either case the supply is very great. Each hemisphere has its own arteries; but the venous blood is carried away by a common canal.

The substance of the brain is composed of a white matter in the interior, called the *medullary* portion, and of a gray or *cineritious* matter forming the outside, which dips down with the convolutions, and forms the dark substance seen between the folds. It does not blend gradually with the white or medullary matter, but, on the contrary, the line of demarcation is abrupt. The supply of blood seems to be greater than in the medullary portion. The convolutions appear intended for the purpose of increasing the superficial extent of the brain without enlarging its absolute size—an arrangement analogous to that employed in the eye of the eagle.

It is often asked whether in the brain there are distinct lines of separation observable between the organs. We answer no. We presume that in the brain such lines do exist, though our present means of observation are too imperfect to detect them; but, as I have before stated, this objection lies against the distinct functions of the different parts of the spinal column, as well as against the distinct functions of the different parts of the brain.

Sir Charles Bell remarks of the brain, that "whatever we observe on one side, has a corresponding part on the other; and an exact resemblance and symmetry is preserved in all the lateral divisions." This statement is not rigidly correct. There is a general correspondence between the parts on the opposite sides of the brain, but not an 'exact symmetry.' But the symmetry is as great as between corresponding parts in any part of the body, as between the bloodvessels of the left and right arms, for instance, or between the muscles of the two opposite sides. On talking over this matter with Dr. Conolly, he remarked that, as the convolutions were nothing but folds, and as the folding was merely for the sake of packing, a little difference in the folding probably has no influence on the cerebral functions.

I have said that we cannot point out the exact line of demarcation between any two organs in the brain. It must not be inferred from this that no difference can be discovered between various parts, for the convolutions of the propensities are larger than those of the sentiments, and these last are larger than those of the intellect, so that if you were to cut out an organ of a propensity from an adult brain, and present it to a skilful phrenologist, he would have no difficulty in distinguishing it from an organ of intellect.

The different parts of the brain are brought into communication with each other, by means of a number of commissures. At the base of the cleft between the two hemispheres of the brain, is a large body which consists of fibres passing from one homisphere to the other, and uniting them: this is called the *corpus callosum*. Ten years ago I pointed out a convolution of the brain lying above the corpus callosum, extending from the bottom of Concentrativeness to the organs of the intellectual faculties. This convolution Mr. Solly has recently shown to be a commissure, uniting the posterior and anterior portions of the brain. This gentleman describes nine commissures—six transverse, two longitudinal, and one oblique. The superior commissure which unites the anterior and posterior parts of the brain, I showed to a number of physicians both in this city and Philadelphia. Dr. McClellan of Philadelphia confessed that before my arrival in that city he used to deride phrenology, mentioning in particular to his class, that no communication was found to exist between the anterior and posterior portions of the brain. He found, however, that he had been laughing in ignorance of the existence of the superior longitudinal commissure. But he had the rare magnanimity to confess it to his medical students.

The capital or top of the spinal marrow is called the *medulla oblongata.* Here we notice three bodies on each side, constituting what are called the *corpora pyramidalia,* the *corpora olivaria,* and the *corpora restiformia.*

The *corpora pyramidalia* are a continuation of the anterior or motory tract of the spinal marrow. They are fibrous, decussate at their lower extremity, proceed upward through the *Pons Varolii,* escape from its upper border, and the *greater number* passing still upward form the anterior and external bundles of the *crura cerebri* and exterior part of the *corpora striata,* and ultimately expand into the inferior, anterior, and exterior convolutions of the *anterior* and *middle lobes* of the brain. A number of fibres of the corpora pyramidalia pass into the *middle* and *posterior lobes,* and a number into the *cerebellum.* We shall immediately see how beautifully this arrangement of the motory fibres, corroborates phrenological doctrines.

The intellectual faculties are situated in the anterior lobe of the brain. They enable man to perceive objects that exist, their qualities, and relations, and when acting together they constitute *will.* We have seen that the intellectual organs spring from the corpora pyramidalia which are at the top of the motory tract of the spinal marrow. Here, then, is a direct relation between the convolutions which *manifest will*, and the motory tract which *executes will.*

The corpora olivaria and corpora restiformia spring from that column of the spinal cord which is devoted to *sensation.* The former pass upward into the Pons Variolii, and form the posterior and interior parts of the crura; thence through the great posterior ganglion, and expand partly into the convolutions of the anterior lobe lying on its *upper* surface, towards the mesial line, partly into the superior convolutions towards the mesial line of the middle lobe; but chiefly into the convolutions of the posterior lobes. The latter ascend and form the chief part of the cerebellum, but a portion enters into the composition of the posterior lobes of the brain. The distribution of these fibres is also in beautiful harmony with the doctrines of our science.

The convolutions of the *middle* and those of the *posterior* lobes of the brain, manifest the *feelings.* These, as we have seen, spring chiefly from the corpora olivaria. The functions of the cerebellum is to manifest the instinct of reproduction, which is also a *feeling;* and the cerebellum springs, as I have just said, from the corpora restiformia. Now these bodies constitute the top of the *sensory* tract of the spinal marrow.

We see, then, that while the *intellectual* organs are formed of fibres connected with the *motory* tract, the organs of the *feelings* are formed of fibres connected *principally* with the *sensory*, but *partly* with the *motory* tract.

The arrangement of structure, by which the organs of feeling are supplied with fibres in direct connection with the motory tract, is another manifestation of that harmony which subsists between phrenology and anatomy, rightly understood. Each feeling manifests itself by means of the muscular system. Thus fear, rage, or any other feeling communicates great energy to the muscles of voluntary motion. Again, each feeling impresses certain peculiar motions, called its natural language, on the muscular nerves: thus self-esteem, when predominant, gives the tendency to carry the head and body reclining backward. Hence, again, we see the necessity of a direct communication between the feelings and nerves of motion.*

We come now to the question—Can the size of the cerebral convolutions be ascertained by inspection of the head during life?

The brain is embraced by three membranes: the *pia mater* and *tunica arachnoidea*, both very thin, and the *dura mater*, which is thin but strong, and adheres strongly to the inner surface of the skull. The brain enclosed in these membranes so exactly fills the interior of the skull that a cast in plaster of the interior of the skull, is a *fac simile* of the brain covered by the dura mater.

The skull is the bony case: this is composed of three layers—a very compact one internally, a less compact one externally, and a cellular layer between, called the diploë.

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*During Mr. Combe's first visit to New York, a number of medical gentlemen expressed a strong desire to witness the dissection of the brain, according to the method pursued by Gall and Spurzheim. I took occasion to mention this to Mr. Combe, who, with the utmost readiness, offered to demonstrate the brain, and gave me leave to form a class of medical gentlemen to witness the dissection. Brains were provided, and at the appointed time, the lecturer demonstrated to a class, several members of which were medical professors, the fibrous character of the brain, the decussation of the fibres of the corpora pyramidalia, their passage through the Pons Varolii, and their ultimate expansion into the anterior and middle lobes. In like manner he traced the fibres which rise from the corpora olivaria and corpora restiformia to their respective expansions. He traced the optic nerves to the anterior pair of the corpora quadrigemina. Showed the various commissures of the brain, and the manner of unfolding its convolutions. There was a general expression of satisfaction and gratification, and an acknowledgment from all present, I believe, that they had seen some things which they had never before had the opportunity of witnessing.

Now the external surface of the skull corresponds almost exactly with the internal, except in a few points. which I shall mention. The departure from perfect parallelism, where it occurs, is limited to one-tenth or one-eighth of an inch. Again, the integuments or coverings of the skull lie close to its surface, and are so uniform in thickness as to exhibit its true figure. Thus, then, there is, in general, no obstacle to the discovery of the form of the brain by the form of the skull or head.

The skull is very thin at the orbital plates, and at the squamous portion of the temporal bone: it is thick at the ridges of the frontal and occipital bones, but this is always the case, and therefore presents no difficulty.

One part of the brain, however, does sometimes present a difficulty. I refer to a cavity called the frontal sinus. It lies above the nose and is formed between the external and internal surfaces of the skull. The size of this sinus varies. But recollect that it only interferes with five organs—Form, Size, Weight, Individuality and Locality. Again, below the age of twelve it does not exist: and as the five organs before mentioned are generally very active before that age, the sinus cannot interfere with our observation of them before that period. The sinus, therefore, presents *no difficulty* in the way of *our discovering the functions of these organs*, if we study subjects below twelve years of age. The opponents *conceal* this fact. After this age it appears, gradually enlarges, and after twenty may present some difficulty to the observer.*

Look at this skull for yourselves. You see that the parallelism of the outer and inner surfaces is almost complete. —You will observe the same in this, and this, and this—

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* I was the first to maintain that it was impossible for us to determine, with exactness, the development of certain convolutions, by the inspection of the external surface of the cranium. Gall iii. 22.

in short, in all healthy skulls. Observe this skull—it is that of a boy twelve years old—you see the sinus does not exist. In this we have it of average size; and when of this size, no difficulty is presented.

Recollect, phrenologists pretend not to tell the power of an organ when the brain or skull is diseased. They make their observations *on healthy individuals in the prime of life.* It is therefore utterly futile to bring against us morbid specimens. In disease of the brain the inner table of the skull sometimes recedes, and not the outer, the space between being often filled up with bone, rendering the skull very thick —occasionally enormously so. Here is a skull as irregular on the surface as the sea ruffled by the wind; but then it is the skull of a very old man. I know a gentleman of Bath eighty-six years of age, in whose skull a like change has taken place. Such cases are not uncommon and I am at a loss to account for them, since they seem not to result from disease, as the faculties of the gentleman I refer to are healthily manifested. This skull is very thick and irregular: it belonged to a dragoon in the British service, who became insane, and nine months afterward killed himself. In this case we find the frontal sinus very wide—nearly half an inch.

Dr. Sewall of Washington, to whom, when in that city, I was indebted for many acts of kindness, has published a work against phrenology, almost entirely taken up with a description of diseased skulls. Now, as I remarked to him, his work is no more anti-phrenological than it is anti-geological or anti any thing else. To the frontal sinus I shall again allude, when I come to the range of faculties which may be interfered with by its size. In the mean while, however, bear in mind that there is a great difference between the possibility of *discovering* the functions of an organ and of applying this discovery practically in *all* cases, so as to be able, to predicate the exact degree in which every particular mental power is present in each individual.

Now we have seen that before twelve no impediment to its observation exists. Again, in after life, if the skull be depressed in this part, no error can be committed in stating the subjacent organs as small; for if the sinus be larger than it seems, the error will be on the side of the phrenologist. The only cases which at any time can be productive of error, are those in which the sinus causes a protuberance without, to which the brain does not correspond within. But even here, it is possible, in general, to distinguish between external appearances produced by a large development of the frontal sinus, and those indicating large development of the organs. In the first, they are generally abrupt and ridgy; in the second, they present a rounder swell, and follow the direction of the organs as delineated on the busts.

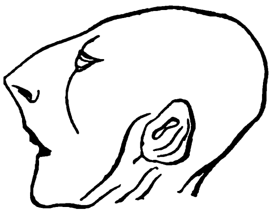
We may be asked how it is that an infant's skull, such as the one I hold, can be enlarged to the size of an adult skull. The explanation is this: Two processes are ever going on in the system—deposition and absorption—by the first of which new particles are laid down, and by the second old ones are taken up. The skull, then, is a strong, but not an adamantine barrier. It shields the brain by its powerful structure, yet for ever changes to accommodate itself to the size of its noble occupant: for it is worthy of remark that, throughout organized nature, the hard parts yield to the soft. Thus large lungs produce a large chest—not a large chest large lungs. So the skull is formed to the brain—not the brain to the skull. At first the brain is covered by a mere membrane, in which bone at length begins to be deposited. The deposition commences at particular points, and bony rays shoot out in all directions, just as you have seen in the formation of ice. It is not till some time after birth that ossification is complete. The skull is formed into eight bones, which unite at their edges, and become dovetailed together. The lines of union are called *sutures* or seams.

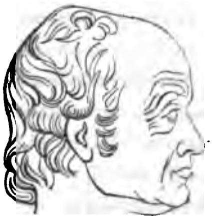
The extent to which the head may be enlarged is seen from this enormous skull, which belonged to an individual whom I saw at St. Thomas's Hospital, who was affected with water in the brain. His faculties were sound, but his head was so heavy that he could not support it.

In commencing the study of phrenology, individuals generally become very diligent feelers of their own heads. They search about, and finally they rest upon this large protuberance behind the ear. They are in amazement at the size of the 'bump,' as they are pleased to call it. Then they wonder whether it is a good bump or a bad one. Now this protuberance is a mere bone, called the mastoid process, and is for the attachment of muscles. It has no relation whatever to the brain, and may therefore be not unaptly styled the Ass's bridge, over which incipient phrenologists have to pass.

With regard to this word 'bump,' which has long been supposed to contain a whole volume of wit within itself, allow me to remark that I think its use is sanctioned by neither correctness of language, nor sound philosophy. It is often used, too, in a low, contemptuous sense. It is evident to me that the brain is the work of God, and eminently displays His goodness and wisdom. In talking of it, we ought, therefore, to use philosophical and respectful language. What would you think of a man's taste who, before speaking of the functions of the eye, should say—"Come, let us say something about the *blinkers*"?—or, as an introduction to a demonstration of the functions of the stomach, should say—"Come, let us talk about the *bread-basket*"? Yet, such expressions are on a par with—"Come, let us talk about the *bumps*."

In concluding this part of my subject, let me show you how unimportant a difference of one-tenth or one-eighth of an inch is in the thickness of the skull. This is the head of Joseph Hume, M. P.; this of Dr. Chalmers. The general size is nearly the same in both; yet, in the region of Ideality, Chalmers' head is *an inch and a quarter* wider than Hume's. Contrast this head of General Wurmser with that of the Hindoo in the regions of destructiveness and combativeness. Contrast these three heads in the region of firmness: there is a difference of more than an inch. Contrast this head of an idiot with that of Dr. Gall: how vast the difference!—We evidently need not trouble ourselves about very minute shades.





As to authority, the best is on our side. Magendie says that " the only way of estimating the *volume of the brain* in a living person, is to measure the *dimensions of the skull*. Every other means, even that proposed by Camper, is uncertain." Sir Charles Bell, Cuvier, Monro, Blumenbach, and others, hold similar language. That the form of the brain can be ascertained by the form of the head may then be considered as established.

But it has been objected that the whole method of phrenologists is empirical, that we cannot weigh or measure either an organ or its manifestation. We plead guilty to the charge, and freely admit that the two elements in our method of investigation are both, in their own nature, *estimative*. But then, we affirm that if an observer possess an average endowment of the observing and reflective faculties, he may, by due practice, learn to estimate both development and manifestation with sufficient precision to lead him to positive conclusions. Phrenology rests on the same kind of evidence as the practice of Medicine. Diseases are judged of by the symptoms or appearances which they present. The knowledge of what organs are affected; of the degree to which they are affected, and of the extent to which medicines act on them, depends entirely on *estimative* evidence.

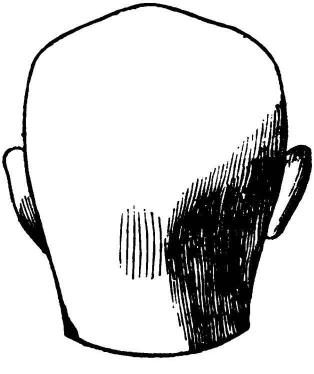
The same general laws of evidence must necessarily apply to the study of phrenology as of medicine. The mental manifestations are neither ponderable nor measurable any more than the capacity for pain or pleasure, or the powers of hearing or sight. We *estimate* the degree to which these susceptibilities and capacities are possessed by different individuals, and regard our knowledge as substantial; so we *estimate* the force of mental manifestations by the exercise of observation and reflection, and must necessarily do so, or remain for ever ignorant of mental science. Again, I have just demonstrated that differences between the form of particular organs, and between their size, when large and small, are so palpable that to deny the possibility of distinguishing them, in favourable cases, is perfectly absurd; and in *proving* science, we are not only entitled but bound by the dictates of common sense, to select the simplest and most striking cases as best calculated to bring truth to light. Those individuals, therefore, who object to the evidence on which phrenology is founded, appear to me completely to misunderstand the nature of the inquiry. To deny the possibility of estimating the size of the cerebral organs and mental manifestations, is as absurd as to deny that we can estimate whether any feature of the body be large or small, or whether a person be blind, near-sighted or sharp-sighted.

I shall now proceed to describe the particular organs, premising that the faculties are divided into two orders—FEELINGS and INTELLECT; the feelings into two genera—PROPENSITIES and SENTIMENTS. Of the Propensities I shall now treat:

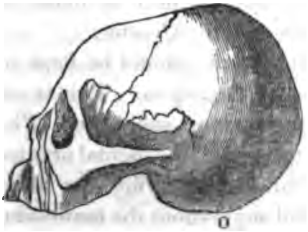
1. AMATIVENESS.

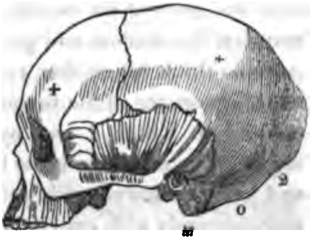
To learn the situation of this organ, feel on the middle line toward the base of the skull at the back part of the head, and you will find a small bony projection named the occipital spine. Amativeness is situated below that point and between the mastoid processes. The size of the organ is indicated by the extension of the inferior surface of the occipital bone backward and downward, or by the thickness of the neck at these parts between the ears. Its large size gives great peripheral expansion to the neck from the ears backward. In infants, the cerebellum is the least developed of all the cerebral parts, forming but from one-thirteenth to one-twentieth of the weight of the brain, whereas at adult age it constitutes from one-eighth to one-sixth. In infants, the part of the neck corresponding to the cerebellum appears attached to the middle of the base of the skull; towards puberty it begins to expand behind. This part is generally more developed in males than in females.

1. *Cerebellum moderate.*



2. *Cerebellum large.*





3. O *Represents a large development of the cerebellum downwards.*

4. *In this skull the distance between* M *the mastoid process, and the spine of the transverse ridge of the occipital bone is large, although the occi vital swelling* O *does not droop as in the preceding skull.*

The function of the cerebellum is to manifest the sexual feelings. In this bust of Dr. Hette the development is very small, as you perceive, and the manifestation of feeling corresponded. Compare the bust of Hette with this of Mitchell and this of Dean—how enormous the development in these last!—both of whom were executed, Mitchell for murdering a young woman whom he had seduced, Dean for murdering a child without any rational motive, and undoubtedly under the influence of diseased cerebral action, occasioned by disappointed love. You see here the head of the Rev. Mr. Martin, in which it is small. This is the head of Linn, the parricide, in which it is very large. The head of Gall, as you perceive, shows a very large cerebellum—and it seems to have been the only faculty which he abused.

This faculty exercises a very great influence on the character. Boys before the age of puberty are generally undeferential, and even rude, toward the other sex, but after that age they become kind and attentive. It softens all the harsh feelings of our nature, and increases the force and activity of all the kindly and benevolent affections towards the opposite sex.

It is thought by many that the functions of this organ cannot be approached. But it appears to me that "to the pure all things are pure," and that there is no function which does not present an aspect, in which it may be made to manifest the wisdom and goodness of the Creator.

Some think it best that young people should be kept in entire ignorance of the function of this organ. This is an opinion to which I can by no means subscribe. The organ of Amativeness is the largest of all the mental organs, and being endowed with natural activity, it fills the mind spontaneously with emotions and suggestions the manifestation of which may be directed and controlled, but which cannot be prevented from arising, even though you shut youth out entirely from the world. The question is not, therefore, whether the feeling shall arise or not—over that we have no control—but whether it shall be placed under the guidance of an enlightened understanding, or be withdrawn from the eye of reason, and allowed to riot in all the fierceness of a blind animal instinct. The former course appears to me the only one consistent with reason and morality, and the one which should be invariably adopted.

Messrs. Flourens and Magendie think they have discovered, by inflicting injuries on the cerebellum, that it serves for the regulation of muscular motion. But from these experiments no certain conclusions are deducible. The infliction of injury on one part of the nervous system deranges other parts—and hence it is not the way to determine the functions of any. Again, Mr. Solly has discovered a column of fibres which passes from the motory tract of the medulla oblongata to the cerebellum. Now when these experimenters sliced this part, they commenced at the distal extremity of the motory fibres and destroyed them to the medulla oblongata. By thus injuring and irritating the motory tract, no wonder that convulsions followed! The cerebellum is composed, as I have before said, of fibres connected with the motory as well as the sensory tract of the spinal column. It is an organ of feeling, but also influences voluntary motion by instinctive impulses. Injuries of the cerebellum may therefore cause irregular or convulsive muscular movements without being the regulator of such movements. That the cerebellum may manifest other functions than that of Amativeness is not, however, impossible; but that this faculty occupies the largest part of it is unquestionable.*

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* "The cold in clime are cold in blood;
Their love can scarce deserve the name." *Byron's Giour.*

An opinion is somewhat prevalent that the amative feeling increases in strength from the poles towards the equator; but facts are at variance with this hypothesis. No people manifest amativeness more strongly than the Esquimaux, Greenlanders and other northern nations.

LECTURE IV.

2. PHILOPROGENITIVENESS.

[*I have omitted such parts of the lecture as refer to those facts, concerning this organ, which are more fully detailed in the Introductory Essay from page* 26 *to page* 41 *inclusive. To that essay I refer the reader.* A. B.]

THIS faculty has been confounded with that of benevolence, but it is often strong when benevolence is very weak, and weak when benevolence is very strong. When the organ is large it renders the office of rearing children pleasant, nay delightful, even when they belong to others. Sir Walter Scott remarks that among children there is a sort of freemasonry, by which they detect almost instantly those who pay attention to them merely that they may be pleasing to the parents, and that they recognize by intuition those who take real pleasure in their society.

This faculty is frequently abused; people often pamper and spoil children instead of training them rationally. They forget that this is a *blind* feeling; indeed, all the propensities are blind—and by proving this, phrenology will confer one of its greatest boons on man.

This faculty sometimes takes a direction that has subjected its possessors to ridicule. In the United States, all ladies who have arrived at adult age seem to be married; but in my own country, this (alas!) is not the case; and among unmarried ladies we see the amiable feeling now under consideration lavished upon lap-dogs, cats or birds, these delicate and little animals being used as substitutes for children. This practice is often ridiculed; but recollect that it is the manifestation of a feeling which under more favourable circumstances would have rendered them excellent and devoted mothers.

Here is the skull of a negro; this of a Scotch highlander; this of a Charib from the island of St. Vincent; see how largely the organ is developed—and these people strikingly manifest love of children. When at Brussels, I talked with a woman concerning the behaviour of the Scotch highlanders who had been billeted in her house, during the war. She said they were as gentle and affectionate in the house as they were brave in the field, and that they were very fond of children. See what a large development in the skull of the poet Burns—and how beautifully is the feeling manifested in his poetry! In the Esquimaux it is very large; here is a specimen. Captain Parry says, that love of children is almost the only amiable feeling they manifest. He met a party of them without food and almost dying with hunger; he relieved them, and the first thing they did was to feed their children, not attending to their own wants till the little ones were fully satisfied.

This organ is sometimes diseased. Mental derangement is one of those subjects on which phrenology throws a flood of light. Diseased affections of the mind, by reason of men's ignorance, have been a source of much anxiety and maltreatment. People have known not what to do. Sometimes terrified, sometimes horrified, sometimes mystified, they have had no idea that it was the disease of a *material* organ, which was probably in a state of exalted action, and which, like inflammation of the eye, might be got rid of by a proper remedial course.

A lady in whom this organ is very large, told me that she frequently dreams of children. She described one dream which imparted to her the most exquisite delight, in which she seemed to have her whole lap full of babies, which were smiling, sprawling, raising their hands and tossing about in the most interesting manner imaginable.

I now come to what is called the *Natural Language of the Organs.* Up to this time you will perhaps grant that I have been talking with a show, at least, of reason; but now you will probably set me down as fanciful and absurd. I am prepared for this; but I doubt not that you will acknowledge its truth before the end of the course; for as most of you have some predominant organ, and as each organ has a language of its own, though you may think my description of the natural language of those organs which in you are weak to be ridiculous, you will recognize the language of your own strong organs, and be convinced that there is truth in it after all.*

The law of action, as laid down by Gall, is, that the motions are all in the direction of the seat of the organs. That natural language does exist all will allow when they reflect that by mein, walk and gesture the actors of pantomime are enabled to operate powerfully on the feelings without uttering a word. The natural tendency of Philoprogenitiveness when predominantly active, is to throw the head backward.

Near Manchester I saw a young woman bring her husband's breakfast to him, and sit by the road-side till he ate it, spending the time in caressing her child. Her whole manner was expressive of the highest delight. She kissed and fondled the infant, pressed it to her bosom, and then she threw back her head, repeating the same action several times. This was the natural language of this feeling. It would have formed a most beautiful subject for a painter.

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* Pantomime is the universal language of all nations, and of all animals. There is no beast, there is no man who does not learn it; there is no beast nor man who does not understand it; it accompanies language and strengthens its expressions; it supplies the defects of articulate language; words may be ambiguous, but pantomime never is so-Gall v. 266.

The great painters of Italy noticed the same expression, and in their representations of the murder of the innocents, they place the bereft mothers with their heads thrown back and the extreme of agony depicted in their countenances.

3. CONCENTRATIVENESS.

THIS organ is situated immediately above Philoprogenitiveness, and below Self-Esteem. Phrenologists differ concerning its functions, therefore I shall not occupy much time upon it. Spurzheim, from observing it large in animals fond of dwelling in one place, called it *Inhabitiveness.* I observed persons whose thoughts, like clouds, come and go without regularity—whose sentences have succession without relation. In them I have found the organ very small. I observed others, of less mental capacity, remarkable for continuity of thought, and for the natural relationship existing between the successive subjects of their conversation. In these I have found the organ large. It appeared to me, therefore, that its function is to *keep two or more organs in continuous and simultaneous activity.* Dr. Hoppe and the Rev. Dr. Welsh agreed with me in this view. I have already mentioned that I noticed some years ago a convolution of the brain running from the region of this organ, near the base of the cleft between the two cerebral hemispheres, and terminating in the anterior lobe, and that Mr. Solly has since proved this to be a commissure.

Dr. Vimont of Paris has made some observations which, if established, will reconcile the views of Dr. Spurzheim and myself. Having directed his attention to birds which live on fish, and which hover over water, watch with intense fixedness and then dart downward as though they were arrows rather than living beings, and having compared them with ducks and other animals which practice no such concentrated watchfulness and action, he found in the first a great development of the lower part of this region, and in the others great deficiency. This he calls

Concentrativeness. He found that this organ did not occupy the whole space, but left a region immediately above it and below Self-Esteem which, he is convinced, appertains to the faculty of Inhabitiveness. If this view be correct, and I am pretty well satisfied that is, then are Dr. Spurzheim's views and my own reconciled.

4. ADHESIVENESS.

This organ is situated at the middle of the posterior edge of the parietal bone, on each side of the lower part of Concentrativeness and the upper part of Philoprogenitiveness. Dr. Gall was requested to mould the head of a lady who was a model of friendship. He did so, and found two large symmetrical protuberances, one on each side. The lady had suffered great mutations of fortune. She had been rich, and then poor—again rich, and again poor; but amid all these changes she remained firmly attached to her friends. The idea naturally suggested itself that this part might be the organ of the disposition to attachment. Many subsequent observations confirmed the conjecture.

You will seldom find this organ in an isolated protuberant state. Its large size is generally indicated by the breadth and fullness of this region. Compare these two skulls; this is the skull of an Esquimaux in which Amativeness and Philoprogenitiveness are very large, and Adhesiveness small; this is the skull of a Swiss, in which all three are very large.

Those in whom this organ is large feel the instinctive tendency to embrace and cling to the object of their affections. Boys manifest it by their attachment to dogs and rabbits, and in girls, to the feeling of Philoprogenitiveness it adds the hug of affection which they bestow upon their dolls. I have seen the poet Moore, and know this organ to be large in him, and his poetry breathes its very spirit:

"The heart, like a tendril accustomed to cling,
Let it grow where it will cannot flourish alone;
But will lean to the nearest and loveliest thing,
It can twine with itself, and make closely its own."

Again—how it glows in the following lines!—

"The heart that loves truly, love, never forgets,
But as truly loves on to the close,
As the sun-flower turns to her god as he sets,
The same look that she turned when he rose."

In general this organ is larger and the faculty stronger in woman than in man; and the extreme ardour and constancy of their attachment may be attributed to this circumstance. In them alone can friendship be found in the fullness of perfection. Taking advantage of this proneness to attachment—this consecration of the heart to the object of affection—some men, for the gratification of a most despicable vanity, or from a worse motive, sport with this beautiful trait of female nature—conduct which should subject them to double infamy, but which is too often allowed to pass without censure. The seducer glories in his successful villany, while the wronged one is mourning in utter wretchedness, over ruined hopes and a blighted name.

We often find strong attachment subsisting between persons of very different mental characters, in whom there are many points of repulsion; but the strength of this feeling serves as a bond of union. There are husbands and wives in whom the attracting and repelling forces are so balanced that they can be happy neither together nor apart. They are for ever quarreling and making matters up; they part and unite, part again and again unite; again fly off, and again come together. They are a complete puzzle to their friends, who can place no dependence on their assertions or protestations. In these cases, Adhesiveness will generally be found largely developed in both parties. This produces instinctive attachment; but other discordant organs will be found in their heads, which produce reciprocal repulsion.

This faculty is the bond of union among men, and gives rise to society. It is found large in many animals; but there are some, as the fox and magpie, which live in the married state, that is, they are attached for life; some, again, as the dog, live in society, but are not attached for life. Spurzheim thought attachment and attachment for life to be modifications of the same faculty. Gall inclined to think them distinct faculties; and Dr. Vimont thinks he has proved this to be the case, and considers the region which we ascribe to philoprogenitiveness as comprising two organs—love of young in the middle, and on each side attachment for life.

This organ is sometimes so active in oxen and horses, that they become sick, when deprived of their accustomed companions. This diseased condition of the organ in man is called nostalgia. Many are unaware of the strength of this feeling till they have occasion to leave home. When away from their friends and companions they feel a yearning toward them, and a longing and craving to be again at home.

Amativeness, philoprogenitiveness and adhesiveness form the group of domestic affections, on the due regulation and proper exercise of which so much of our happiness depends.

The natural language of this faculty is to embrace and cause the organs to approach, as you see in this plate of two little girls, and this of a girl and dove. When a dog or cat is under the influence of this faculty, and wants to show great attachment, it will rub this part of the head against its master's leg.* When two persons meet in whom this organ predominates, they feel an involuntary attachment toward each other springing up in their minds, unless their other faculties be very incongruous. Those who have it large give the hand a hearty shake on meeting; those who have it small hardly press the hand at all. With the first, absent friends are ever present; they think of them with a warm glow of affection. With the last, out of sight out of mind. The organ was large in Burns, and his poetry is full of its spirit. It was large in Mary Mac Innes the murderer, and she strongly manifested the feeling. A person to whom she was firmly attached had sent her a pocket-handkerchief with his name written on one corner, and also half an orange, requesting that she would eat it on the scaffold in token of their mutual affection, he having eaten the other half the preceding morning at the corresponding hour. She held the corner of the handkerchief, on which his name was written, in her mouth, all the night preceding her execution. When seated on the drop she took the orange from the turnkey, saying, "Tell him that I die perfectly satisfied that he has done all in his power for my life, and that I eat the orange as he desired me. May God bless him. Say to him that it was my dying request that he may avoid drink and bad company, and be sure never to be late out at night." She forgot eternity in the ardour of her attachment.

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* There is a beautiful group of Castor and Pollux, in which we see their arms resting on each other's shoulders, and these friends pressing together their organs of attachment. In the Madonna *au lapin* of Raphael, Mary presses this region of her head against the corresponding region of the head of the child. Gall, v. 272.

In 1836, Dr. ———, had a patient whom he examined after death, and in whom he found the lungs extensively diseased. This was conceived to be a sufficient cause of death, and the examination proceeded no further till the brother of the deceased asked him with eagerness what they had found to be the condition of the brain; and when he learned that no examination had taken place, he requested that they would proceed to examine it. They did so, and to their astonishment found twenty-seven abscesses, eleven in the cerebellum and ten or eleven more in the posterior lobe, there being but one in the intellectual region and it was in the organ of Tune. The brother then stated his reason for making the request he had. His brother, he said, had been a resident of London, where his family then resided, and that he was formerly very much attached to his family; and that when he first came to Edinburgh he manifested about them the usual anxiety, but that before he died attachment to them was utterly lost, and that he would hardly have mentioned them in his will if he had not been urged to do so.

5. COMBATIVENESS.

THE organ of this faculty is situated immediately backward and upward from the ear. Gall discovered it by collecting together a number of the lower classes of society, studying their characters and comparing their developments. He found such as were remarkable for being *bravoes* to have this part large, such as were noted for cowardice to have it very small. Subsequent observations established the discovery. In Vienna animal combats were frequently exhibited, and one man was so intrepid that he often presented himself alone in the arena to sustain the attack of a bull or a wild boar. In him Gall found it very large. He found it very large in a young lady who had repeatedly dressed herself in male attire and maintained battles with men.*

Dr. Brown speaks of this faculty. "There is," says he, "a principle in our mind which is to us like a constant protector, which may slumber, indeed, but which slumbers only at seasons when its vigilance would be useless; which awakes, therefore, at the first appearance of unjust intention, and which becomes more watchful and more vigorous in proportion to the violence of the attack which it has to dread." "Courage," says Dr. Johnson, "is a quality so necessary for maintaining virtue, that it is always respected, even when it is associated with vice." Sterne's Uncle Toby is a personification of great combativeness, benevolence and integrity.

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* In the first interview I ever had, in my travels, with a devoted amateur of cock-fighting, he thought he was confiding to me a great secret, by telling me that, by sight alone, he could distinguish good fighters from poor ones, and pointing out, as the distinguishing mark, a great breadth of the head, a little in front of the ears. This man had no knowledge of my discoveries. Gall iv. 27.

This faculty produces active courage, the instinctive propensity to oppose, and gives that boldness to the mind which enables it to remain undaunted amid opposition; a considerable endowment of it is, therefore, indispensable to all great and magnanimous characters. I knew a lady in whom the moral sentiments were large and Combativeness very small, who confessed that she felt the want of a proper development of this organ as a great deficiency in her character. She lacked the courage to oppose even manifest wrong. She felt that she should have been a much more useful woman with a proper endowment of Combativeness, and sometimes shed tears at her own pusillanimity. A man without proper Combativeness is always trodden under foot.

This organ was very large, as you may see by this head, in General Wurmser, (1) who defended Mantua against Bonaparte. Fighting was his chief delight. His intellect was by no means remarkable, and Napoleon said he gave him more trouble than ten better men. By his sudden and fierce attacks, made in defiance of all military principles, he kept the French in a continual state of alarm. It is very large, as you may see, in King Robert Bruce, and all know how strongly he manifested the faculty. Let the skull of either of these heroes be compared with this of a Ceylonese boy.(2)

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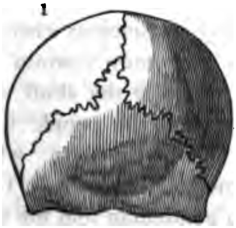

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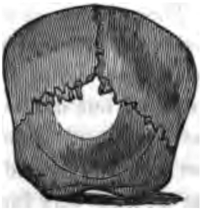

The faculty is of great service to the barrister, and causes his energies to rise in proportion as he is opposed. Combined with Destructiveness it inspires authors with the love of battles. Sir Walter Scott, who possessed this combination, rose above his usual energy when describing the fight, the slaughter, and the shouts of victory. From this sympathy of authors with warriors, a successful butcher is too often elevated to the rank of a hero, and success in arms considered glorious without reference to the merits of the quarrel.

This faculty, large, gives the love of contention. Thus you find persons who dispute every thing; they say it is the love of truth which instigates them, but it is in reality the love of quarreling. It is reported of a native of Aberdeen, that he was so contentious that when a friend met him and said "this is a fine day, sir," he replied, "tut man who is finding fault with the day." When Combativeness is large and undirected by the moral sentiments, it becomes a great disturber of domestic peace: the hours which should be devoted to pure and quiet enjoyment are embittered by strife and contradiction.

This organ it is for the gratification of which the prize-fights of England are enacted. It is generally very large in those who murder from sudden impulses, as Haggart and Mac Innes. It is usually more developed in man than in woman, but sometimes it predominates in the latter, and gives her a bold, forward air. It gives girls a tendency to romp. You see this organ very large in the statue of the ancient gladiator.

Those in whom it is large are very pugnacious when intoxicated, though at other times they may restrain the propensity within proper bounds. Here is the skull of a native of one of the British Isles, where the people have the propensity so strong, that it is said in song 'when one meets his friend he for love knocks him down.' In it the organ is very large. An Irish gentleman told me that at their fairs it was not uncommon for one of his countrymen after becoming excited by whiskey, and unable any longer to repress his pugnacity, to range along the booths till he could see a head poking out somewhere, when he would give it a blow which would bring out its owner in quick time, then a regular fight would ensue.—Contrast this head with that of the Hindoo, in whom combativeness is feeble —what a difference you perceive! Bull-dogs are always broad here, greyhounds narrow. When horses are narrow behind the ears they are shy, when broad they are bold; when broad here and low in the forehead they are vicious; when broad here and high in the forehead, they are both bold and good-natured.

In our intercourse with men the knowledge of the mode in which this faculty operates is most useful. Knowing that such men constantly desire to oppose, the best plan is to state your opinion or arguments as clearly as possible, and if your meaning is perverted, your expressions distorted and the the question embarrassed by extraneous matter, to drop the argument and leave your opponent in quiet possession of the field. This will be to him a real punishment and give a better chance for your views to sink into his mind.

This organ is often diseased. Pinel says, "A maniac naturally peaceful and gentle in disposition, appeared to be inspired by the demon of malice during the fit. He was then in an unceasingly mischievous activity; he locked up his companions in their cells, provoked and struck them, and at every word raised some new quarrel and fighing." I have before related a case in which diseased manifestation was attended with pain in the organ.

The natural language of this propensity is to throw the head backward and to one side, as in the attitude of boxing; the painters have noticed this. It gives a cutting expression to the lips, and a harsh thumping sound to the voice; Madame de Stael noticed this in Napoleon, and remarked, that when excited every word he uttered seemed to contain a shot. Boys who have it large, stand up boldly when fighting, and look their adversary in the face. Those who have it small rarely fight, and when they do they generally poke their head as soon as possible to the breast of the adversary. It has been objected to this view of the natural language, that men put themselves into the described attitude because it is the best position both for attack and defence. We reply that boys who are quite young instinctively assume this attitude without in the slightest degree considering its propriety; and that this attitude is best is an inevitable consequence of its being natural.*

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* A clerical friend handed me the following note, I insert it entire.

Constitit in digitos extemplo arrectus uterque,
Brachiaque ad superas interritus extulit auras,
Abduxêre retro longè capita ardua ab ictu;
Immiscentque manus manibus, pugnamque lacessunt.
Æneid, B. V. verse 426.

"Both on tiptoe stand, at full extent;
Their arms aloft, their bodies inly bent;
Their heads from aiming blows they bear afar,
With clashing gauntlets then provoke the war."
Dryden.

This seems to me a pretty and very correct illustration of the *natural language* of "Combativeness." As such it may be worth remembering. It occurs in Virgil's description of the encounter between *Dares* and *Entellus*. T. J. S.

LECTURE V.

6. DESTRUCTIVENESS.

THIS organ is situated immediately above, extends a little backward and forward from the external opening of the ear, and gives to that part breadth and elevation in proportion to its size. In graminivorous animals, only a small portion of the brain lies behind the external opening of the ear; while in the carnivorous, a considerably larger mass is situated there. This is well shown by exhibiting the difference between this, the skull of a young lion, and this, the skull of a roebuck. This is the skull of a fox; a sheep; a cat; a dog; a rabbit; a savage baboon. You notice that those of the carnivoræ are broadest just over the ear, whereas those of the herbivoræ are broadest higher up and have little brain behind the ear. You notice too that the former are all much broader in proportion to their size than the latter. By the difference in this part of the skull alone, these two classes of animals are readily distinguishable from each other.

Dr. Gall early noticed this, but drew no particular conclusion from it, till one gentleman sent him the skull of a parricide, and another the skull of a highwayman, who, not content with robbing, murdered his victims. On comparing these, he found them both very wide here. This fact, in connection with his previous observations on the skulls of animals, led him to conclude, that in this region might be situated an organ which gives the disposition to kill. At first his mind revolted at the idea; but finding, on still further examination, that nature spoke unequivocally, he was forced to believe her. This organ he called by a French name—*instinct du muertre*—which signifies propensity to kill, but which was ignorantly translated into English by the word *murder*. This blunder was the cause of infinite abuse of phrenology and Dr. Gall. Can it be possible, say declaimers, that God has implanted such a propensity in the human mind? I observe, in the first place, that others besides phrenologists have acknowledged its existence. Lord Kaimes names it the "*appetite for hunting*." It has been said, indeed, that the pleasure of hunting is in the pursuit, and the consequent emulation; but I have asked hunters whether, if some machine could be invented to fly before them as the game now does, they would feel the same pleasure. The answer has always been in the negative: some animal must suffer, or little pleasure ensues.

Poets and authors who delineate human nature are familiar with this feeling. Sir Walter Scott describes its abuse as "*the ruffian thirst for blood.*" The author of Recollections of the Peninsula says, that not only soldiers, but others, "*talk with an undefined pleasure about carnage.*" I have met with young men of good moral qualities in whom the impulse was restrained, but who confessed that to smash and slay would give them great momentary gratification. In them the organ was decidedly large.

Besides, in regarding the scene of creation, we perceive all living beings destined to destruction; and this has ever been the case. The history of the earth informs us that various races of animals and vegetables have successively been destroyed. The works of art are subject to the destroying hand of time; man himself is destined to destruction. Moreover, he has received a stomach fitted to digest animal food, and a bodily system which such food is fitted to nourish and preserve. To gratify this appetite, he must deprive animals of life by sudden destruction, as their flesh is unwholesome if they die of old age or disease, and animals bent on destruction surround him. To place him on earth, therefore, without an organization fitting him for these circumstances of his condition, would have been any thing but indicative of supreme wisdom and beneficence.

Combativeness gives us courage to face danger and to resist aggression. Destructiveness gives us the desire and disposition to hurl destruction on the aggressor. Those in whom it is large take a kind of pleasure in seeing scenes of suffering, at the sight of which those in whom it is small would be agonized. Thus humane and even cultivated indivuals experience pleasure in witnessing executions. They would not put a man to death, but if one is to be put to death at any rate, they think it no harm to look on and enjoy the spectacle. It is always found large in good operating surgeons: medical gentlemen in whom it is small, though possessed of all the requisites of knowledge and skill, would dislike—nay, would be unable—to operate. We see, then, that this organ is absolutely necessary even to perform the behests of Benevolence. I knew a clergyman who had very small Destructiveness, and very large Benevolence, who could not bear to see a person bled. His son was taken ill with inflammation of the lungs: the physician was sent for, and proceeded to bleed immediately, telling the father that he should want his assistance; the minister screwed up his courage, remained till the operation was performed, and then fainted away.

Compare the size of Destructiveness in Tardy the pirate, (1) with its size in the Cingalese boy.(2) This organ is

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always large in cool and deliberate murderers, such as John Bellingham, whose head I now show you. He murdered Perceval, the English Minister, in 1819, by deliberately shooting him in the lobby of the House of Commons. In this the organ is very large, it is the skull of the woman Gottfried, who, though in easy circumstances, murdered, in a series of years, both her parents, her children, two husbands, and six other persons, by small doses of arsenic; yet she would stand by their death-beds seemingly in an agony of grief, but in reality gloating over their protracted torments. See the size of the organ in the head of Hare, who assisted Burke to murder sixteen persons for the sake of selling their bodies for dissection, and who, after his bloody deeds, slept as undisturbedly as though he had been merely killing a pig. This is the head of a man of Belfast who murdered his father. The jury that tried him very properly returned, in conformity with the evidence, a verdict of insanity. He was accordingly confined to an asylum, from which, after some period of correct conduct, he made his escape and proceeded to Liverpool, where, for a deed of violence, he was immediately arrested, and after trial transported to New South Wales. I expect that the next we shall hear about him will be, that he has there committed some dreadful deed.

Contrast these skulls with that of the Hindoo. How small this organ is in them in comparison; and yet it is of its average size in these people. The Hindoos are notorious for their dislike of putting animals to death.* In some parts, indeed, they have hospitals for the reception and maintenance of sick and aged animals. Here is the head of a Flat-head Indian; see how large in this region! Here is one of a Charib, which is still more developed. In these heads you will notice that large Destructiveness is combined with small reflective and moral faculties. Its large size, in proper combination, is quite compatible with high moral character. Here, for example, is the head of Captain Parry, in whom it is large, but in whom the intellectual faculties and moral sentiments preponderate. It is large, too, in Spurzheim, yet he was an amiable philosopher.

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* "If a man kills a fish, the magistrate shall fine him ten puns of cowries."—"If a man kills an insect the magistrate shall fine him one pun of Cowries."—Gentoo Laws, translated by Halbed. C. xvi, Sec. iii.

Satire is a combination of this faculty with wit. It must have been large in Byron. It gives point, too, to that sarcastic, cutting speech, which is so unpleasant to those who are the subjects of it. Some swear with a heartiness which others cannot imitate. Destructiveness gives a force and energy to their imprecations which those who think swearing manly, but whose Destructiveness is small, vainly strive to imitate; there is a softness, a roundness about their imprecations which completely destroys the effect. In Parliament, we find some men with Destructiveness and Language very large; and whose speeches are complete torrents of invective—often of nothing else. Yet after such a speech, the newspapers are full of laudatory remarks: "such energy!" "such torrents of invective!" "such withering sarcasm!" For my own part, I no more admire Destructiveness manifested in this way, than when manifested by blows.

With due reverence, I must be allowed to say that I have noticed preachers in whom this organ is very large dwell principally on "the worm that never dies, and the fire that is never quenched." They mistake, it seems to me, the fervours of Destructiveness, for the inspirations of moral eloquence, and, while they gratify the stern, they harrow up the feelings of the amiable and susceptible. Phrenology will be very serviceable by teaching men the secret fountains of their emotions, and that what is gratifying to them is not necessarily edifying to others.

Those in whom this organ is small are often deficient in proper indignation. A community of such men would be a prey to the profligate and unprincipled. Contumely and suffering would inevitably be their portion. If aggressors visit a community in whom exists a proper endowment of this faculty, destruction is hurled upon their heads, and others are kept aloof by the terror which such a manifestation of the feeling inspires.

Great size of this organ and Combativeness inspires men with delight in battles. Of this we a short time ago had an example in the United States; the Boundary Question was agitated, and every mouth breathed war. The excitement has passed away, and many are astonished now, as I was then, at the violence of their emotions. Phrenology indicates the source of our feelings, and shows us that the propensities ought never to act as the controllers but merely as the servants of reason and the higher sentiments. I met in Edinburgh a young American who said that the United States equalled any European nation in every thing excepting military glory, and that a great war, which would afford them an opportunity for acquiring it, would be a national blessing. I told him that his organs of Combativeness and Destructiveness were large, and that he was merely mistaking the impulses of his own propensities for the wishes and interests of his nation.*

When Destructiveness is excited by disease, there is an exalted manifestation of its function, and a disposition to burn, kill and destroy. Violence or murder may be committed, and we may hang the person on account of his malady. A man in a village in Scotland was observed to enter a cottage and presently to come out and walk deliberately away.

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* The activity of Destructiveness is very evident in the following narrative of Adanson. "What struck me most was the shooting of monkeys, which I *enjoyed* * * I do not think there ever was *better sport* * * Nothing could be *more entertaining* when several of them jumped together on the same bough, than to see it bend under them, and the hindermost to drop down on the ground; while the rest got further on, and others were still suspended in the air. While this game was going on, I continued to shoot at them, and though I *killed no less than three-and-twenty in less than an hour*, and within the space of twenty fathoms, yet not one of them screeched the whole time." p. 316.

He was thought to be a beggar, and no further notice was taken of the circumstance till an hour or two afterward, when a neighbour entered and found the old woman who resided there lying on the floor, with her skull cleft in two by means of a spade. It is an important fact that not the slightest article had been stolen. The man was pursued, taken, and brought to trial. The evidence was such that no doubt remained on my mind that the prisoner was a monomaniac. I mentioned this to Mr. C., the Solicitor General for the crown, a very worthy and amiable man, but he could not understand the force of my representations. A petition was sent to the crown that the man might be confined in a mad-house instead of being hanged, but the petition was refused. The day before that appointed for his execution, Mr. C. asked me if I still considered the man insane. I replied, "Certainly I do." At 4 o'clock in the morning of the day on which he was to be executed, he sent for the Mayor of the City for the purpose of making some important confessions. The Mayor went to his cell, when the man commenced the relation of a whole list of atrocious murders. He said he had killed a child at such a time in such a street of Edinburgh—a man at such another place—and so he kept on, enumerating six or eight murders, in the most circumstantial manner. The Mayor sent for the Superintendent of the Police and related the man's confessions, asking him if they could be true. The Superintendent said it was impossible, no such murders had ever been heard of. They were then convinced that the man was staring and glaringly mad; but at that time no person in Scotland had power to stay the execution, so the poor maniac was taken out at 8 o'clock the same morning and hanged. I met Mr. C. some time afterward, and asked him what he then thought of the case. "The fact is," said he, "it was an ugly business, and the less that is said about it the better" But if by relating the circumstances I can draw attention to the subject and prevent repetitions of such manifest wrong, the relation will be serviceable. Like cases are very numerous in the annals of criminal jurisprudence.

Some say, Granting that a man is mad, if he be inclined to commit murder, he is best out of the way. But madness is a disease; and it would be quite as just and humane to hang a man for having the yellow fever, because he was liable to infect his neighbours. Besides, it makes a vast difference to a man's family whether he be hanged or confined as a lunatic. The latter may be borne with resignation, but the former overwhelms with a feeling of mortification and a sense of infamy. Justice, then, not only to the maniac, but to his relatives and friends, demands that we should be careful in our judgments. And let no man treat this subject as one which does not concern him. None of us know but that ourselves or some member of our families, or some one in the list of our friends and associates, may soon be affected in like manner.

Individuals who commit murder or set fire to property without rational motive, often ascribe their actions to the temptation of the devil; they say that he never ceases to whisper in their ears exhortations to mischief. Diseased activity of this organ, filling the mind with the desire to destroy, probably gives rise to such impressions.

Destructiveness is the great fountain of passion; its natural language is to give a sort of wriggling motion to the head, like that of a dog in the act of worrying. The foot is stamped, the face wears a scowling expression, and the body is drawn up towards the head. In Dr. Chalmers it is large; and when operative in his speeches, he clinches every thing with a blow. When preaching against sin, it seems as though he were endeavouring to pound it out of mankind. In this drawing, by a very able artist who proposes visiting this country, Mons. Edouart, you see it strongly manifested in a scene of matrimonial strife: the woman is daring her husband, and he stands with his head

bent forward, his fists clenched, but retracted, his countenance peculiarly expressive of the power which he has to exercise,in order to prevent passion from boiling over and relieving itself by blows. If, in friendly converse with a person in whom this organ is large and Secretiveness small, one happens to touch on some irritating topic, in an instant the softness of Benevolence, and the courtesy of Love of Approbation, are gone, and the hoarse growl of Destructiveness ushers in a storm.

6.*a* ALIMENTIVENESS.

That the appetite for food is an instinct not referable to any of the recognized faculties of the mind early occurred to Gall: but neither he nor Spurzheim discovered its situation. Observations made by various individuals have proved that there is in man an organ of appetite for food, situated in the zygomatic fossa.

The stomach is to this organ what the eye is to the sense of seeing. Cut off the communication between it and the brain and the appetite will be lost. A dog was kept without food, till he was ravenous with hunger; the pneumogastric nerve was then divided, and the sensation left him at once. A number of cases have occurred, in which a gluttonous appetite existed during life, and these convolutions were found, after death, ulcerated. Dr. Caldwell thinks the burning desire of the drunkard to arise from disease of this organ, and recommends it to be treated with bleeding, cold water, quiet, and attention to diet.

That this is the organ of Alimentiveness has been confirmed by Vimont, and since coming to this country I have seen two strong proofs of it in the collection of Dr. Morton of Philadelphia. One the skull of a Dutch Admiral, who died at Java in consequence of excessive eating, in which the organ is very much developed, but it is still larger in in this, the skull of a convict of New South Wales, who inviegled seven people into the woods, at various times, murdered and ate them.

In the Annals of Physiological Medicine, an account is given of a girl who from infancy exhausted the milk of all her nurses and ate four times as much as other children. At the Saltpétrière she ate eight or ten pounds of bread daily as her ordinary quantity; but she had fits of hunger, two or three times a month, during which she devoured twenty-four pounds of bread. She went one day into the kitchen of a rich family where a dinner party was expected, and devoured the soup prepared for twenty guests, together with eight pounds of bread! On another occasion she drank all the coffee prepared for seventy-five of her companions in the Saltpétrière! Her skull is said to be small, but the propensities predominate, and Alimentiveness is largely developed. Many similar instances are recorded by medical writers. In these cases the food passes undigested. You may generally tell those in whom this organ is large by the interest they take in the table. This organ has been marked as probable, but I now consider it established.

6.*b* LOVE OF LIFE.

That this feeling is manifested in different degrees by different individuals is certain, the bravest men being sometimes excessively attached to life, while the most timid are often indifferent to death. I knew a gentleman of superior talents, but not remarkably happy, who declared that his attachment to life was such, that he would rather live in torment for ever than suffer annihilation. Another, who was present, and a more fortunate man, said he could not conceive the feeling which would lead to such an expression. Dr. Combe had a patient who showed extraordinary anxiety about death. In her he found an enormous development of one convolution, at the base of the middle lobe of the brain, and the skull showed a corresponding very deep and distinctly moulded cavity. From the situation of the con volution its development cannot be ascertained during life. In the Hindoos carelessness about the continuance of life is wonderful. If fatigued on a march, they ask no greater boon than to be allowed to lie down and repose, with every chance of being devoured by the wild beasts, or of being overtaken and slain by the pursuing enemy. That species of *hypochondria* which consists in morbid fear of death, is probably produced by a disease of this organ and Cautiousness. Love of life is strongly manifested in the scene between Rob Roy's wife and Morrison.

7. SECRETIVENESS.

This organ is situated exactly in the centre of the lateral part of the cranium, and lies immediately above Destructiveness. Dr. Gall, in early youth, was struck with the character and form of the head of one of his companions, who was distinguished for cunning and finesse. Although a staunch friend, he experienced great pleasure in deceiving his school-fellows; his natural language was absolutely expressive of cunning, and such as we see in cats and dogs when in playing they want to give each other the slip. At a subsequent period Gall became acquainted with another who was not only cunning but perfidious, and his temples swelled out in the same manner. At Vienna he became acquainted with a physician having a similar development who often told Gall that he knew no pleasure equal to that of deceiving; he carried his tricks so far that the Government warned the public, through the medium of the public prints, to beware of him. From these facts Gall concluded that there is in the human mind, a primitive tendency toward cunning, and that its organ is situated in the region before described. By a great number of observations this conjecture was fully confirmed.

The various faculties of the mind are liable to involuntary activity from internal causes, as well as from external excitement. Acquisitiveness inspires with strong desire for wealth, Language for utterance, Tune for music. If outward expression were given to these feelings as they arise, social intercourse would be disfigured with a rude assemblage of gross or ridiculous improprieties. There needs some ever-prompting feeling to curb these instinctive impulses, until the judgment shall decide upon the propriety of utterance. This curb is supplied by Secretiveness.

Secretiveness is an essential ingredient in a prudent character; it serves as a restraint upon ourselves and a shield against the prying curiosity of others. 'When Napoleon,' says Sir Walter Scott, 'thought himself closely observed, he had the power of discharging from his countenance all expression save that of an indefinite smile, and presenting to the curious investigator the fixed eyes and rigid features of a marble bust.' 'A fool,' says Solomon "uttereth all his mind; but a wise man keepeth it till afterward." Scott's character of Louis XI in Quentin Durward is a fine delineation of the predominance of this feeling. "He was," says he, "calm, crafty, and profoundly attentive to his own interest. He was careful in disguising his real sentiments and purposes from all who approached him, and frequently used the expressions, that the king knew not how to reign who knew not how to dissemble;' and that 'for himself, if he thought his very cap knew his secrets, he would throw it into the fire.' Like all astutious persons he was as desirous of looking into the secrets of others as of concealing his own."

Those who have Secretiveness very large, look upon life as one great stratagem, and upon cunning as wisdom. Pope, according to Lady Montague, played the diplomatist about *cabbages and turnips;* and Johnson says of him that he hardly drank tea without a stratagem. I knew a gentleman, a resident of a village west of Edinburgh, in whom it was very large, and who was so desirous of doing every thing secretly, that when he had to go to Edinburgh he would walk west out of the village, without coat, and by a turn come round to the Edinburgh road, where a person would be waiting with the absent part of his clothing. He thus went to Edinburgh without any of the villagers knowing, and, I suppose, without any of them caring. It is said that a tailor lived next door with equal secretiveness. He long wished to know how this tailor passed his time, but could not learn till one night he fixed a ladder, got to the top of the house, removed two or three tiles, and saw him at work in his garret.

Secretiveness is large in the English, who seclude themselves, surround their houses and gardens with high walls, and are reserved about their history or affairs. It is small in the French, who are very communicative, and pass most of their lives in public. When Secretiveness is large, joined to small Conscientiousness, it prompts to lying; joined to large Acquisitiveness, it prompts to stealing. Merchants in whom it predominates, and whose circumstances are declining, frequently conceal their difficulties from their family till bankruptcy bursts upon them like an explosion. They then plead as an excuse for their conduct a regard for the feelings of their relatives, but the real springs of their conduct are overweening Self-esteem, which hates to acknowledge misconduct or misfortune, and inordinate Secretiveness, which is instinctively averse from candid communication.

Humour is a combination of Wit and Secretiveness. Hence the English and Italians, in whom this organ is large, are very fond of it. The French, in whom it is small, think humour buffoonery, and cannot appreciate it. Secretiveness gives authors the power of hiding the plot till its denouement; its size in La Fontaine is enormous. It is large in artists and actors, and enables the latter to conceal their real characters and put forth the natural language of the assumed one; without this the words might be repeated, but they would not be charged with the required feeling.

This is the head of Ann Ross, in whom, as you see, Secretiveness and Firmness are very greatly developed. She practised various deceptions for the purpose of exciting sympathy and obtaining relief; but her impositions being discovered she was discarded. She was shortly afterward admitted into Richmond Hospital with her wrist severely ulcerated. Mr. Richard Carmichael and others attended her, but no remedial course seemed to afford relief. At length the disease became so bad that amputation was proposed and submitted to without flinching. On examining the arm afterward it was found full of needles which she had purposely stuck there. It is said that she appeared much more mortified at the discovery of the trick than afflicted by the loss of her arm. They did not inform her of the discovery till after she had recovered, and when they did, it struck her to the ground. I saw her after the amputation had been performed.

The natural language of Secretiveness is a furtiveness of look, a soft manner of speech, from suppression of other faculties or propensities, a close mouth, and eyes partly closed, leaving as small a chink as possible, enabling the owner to look out but preventing the world from looking in. Here is a French drawing called 'Hush:' the mouth is shut and the finger upon the lip, but the designer, being ignorant of natural language, has left the eyes wide open. Nature never makes such mistakes. Observe the portrait of Fouché, Napoleon's Minister of Police, with his firmly closed lips and half shut eyes.

8. ACQUISITIVENESS.

THIS organ is situated above the fore part of Secretiveness, reaching, however, further forward. To prevent mistakes bear in mind that it is backward and downward from Causality.

Love of property, say the metaphysicians, is merely a habit originating in the love of enjoyment, and afterward transferred by association to the means of procuring the enjoyment—which is as rational as to say that a man's love of a good dinner becomes, by long indulgence, love of a knife and fork. Lord Kaimes, however, who wrote from observation, recognises this faculty. 'Man,' says he, 'is a *hoarding animal*, having an *appetite* for storing up things of use.' Gall discovered it by comparing the heads of the peasants, whom he used to invite to his house, and who made him their confidant. He found some notorious for petty larcenies, and proud of their superior *savior-faire*—others, who would rather starve than even partake of what their companions had stolen: in the first he noticed this part of the head to be much developed—in the last, to be comparatively small.

There are many periods of life in which we cannot labour, as sickness and old age. Now, if we were content with satisfying our present wants, what would become of us in the time of need? This faculty prompts us to accumulate, to store our surplus.

This is the skull of Tardy, the notorious pirate. You see this organ immensely developed. This is the head of Heaman, executed at Edinburgh for piracy and murder. You perceive a great development of this organ. He saw a number of dollars put on board the ship in which he sailed; they excited his cupidity and haunted his imagination so much, that he did not rest until he had persuaded his ship-mates to assist him to take possession of the vessel. They did so, but were unable to manage it, and consequently it ran ashore on the coast of Scotland, and they were immediately arrested. Owing to its large size in notorious robbers it has been called the *organ of theft*. This is just as appropriate as to call the stomach the *organ of gluttony*. Thieving is a manifest abuse of a propensity obviously given for wise and benevolent purposes.

You have all heard of Robert Owen. That gentleman maintains that the institution of private property is wrong. Now, in his head this organ is very small, and benevolence large. And he has expended a property of £90,000 sterling, or between $400,000 and $500,000, in attempting to carry out his schemes of benevolence.

When Acquisitiveness and Benevolence are both large, the individual will show his kindness by personal exertions, by giving advice, by imparting the results of experience, rather than by giving money. He may acquire, however, for the very purpose of giving, and have a hand open as day to melting charity.

Acquisitiveness is large in the Anglo-Saxon race, and this accounts for the eager pursuit and vast accumulation of wealth for which it is distinguished; we see around us overwhelming evidence of its activity. For untold ages this vast country was inhabited by Indians,—and a few personal ornaments and war instruments were almost the whole extent of their accumulations—the British race appeared—and cities rose, and roads were constructed, and the comforts, conveniencies and elegancies of life were gathered, where the wild beasts had been chased by men almost as wild.

This propensity takes its direction from the other faculties. Combined with Destructiveness, it leads to crimes of violence for gain; combined with Secretiveness, it induces crimes of fraud; combined with large Ideality, Constructiveness, and Form, it stimulates to collections in works of art, as painting, and statuary; with large Eventuality, to collections of books, especially of history, memoirs and travels; with large Individuality, to collections of shells, insects and other specimens of natural history; with Veneration large, to the collection of antiques; combined with large Self-esteem, it produces a disposition to acquire and hoard; combined with large Love of Approbation, it leads to admiration of the rich, and, if Conscientiousness and Benevolence be deficient, to contempt of the poor.

Acquisitiveness is small in the skulls of the Charibs, who never manifested any propensity to theft, and who always insisted, says Rochester, in his History of the Antilles, when robbed, that the crime was committed by a Christian. It is large in the Kalmucks, who are incorrigible thieves. Dr. Spurzheim tells us that a young Kalmuck brought to Vienna by Count Stahrenberg became melancholy because his confessor had forbidden him to steal. Seeing this he was permitted to do so on condition that he should give back what he had stolen. The young man profited by this permission, stole the confessor's watch during high mass, but joyfully returned it when mass was over.

Acquisitiveness when predominant is never satisfied. Its pleasure consists in acquiring—and this explains a puzzle in human nature which has attracted much attention. Men, on retiring from business, instead of finding that repose which they sought, that comfort and enjoyment toward which they had long looked forward with glowing anticipation, are restless and dissatisfied. Man's happiness consists in the activity of his faculties; and when this organ is large the other organs become habituated to work with it in associated activity. Taken away from the business which has constituted the daily stimulus of mind, there is a craving which nothing in retirement can satisfy. But when the moral and intellectual faculties predominate, the individual can glide easily and pleasantly from business to private life.

Sometimes this organ is so large that individuals in good circumstances give way to the temptation to steal. A barrister of Edinburgh was convicted of stealing books—and similar cases are on the records of all courts. A gentleman in good circumstances always pocketed, if possible, some silver spoons when he dined out. He was at last detected by the handle of a soup-ladle peeping out of his pocket.

This organ becomes disordered. Esquirol mentions a Knight of Malta who became addicted to theft in consequence of disease, and who not unfrequently refreshed himself in coffee houses, but instead of paying, put the cup, saucer and spoon in his pocket and walked away. Acrel mentions a young man who manifested an irresistible propensity to steal, after receiving a wound in the temple.

The organ is found in animals, and they have notions of private property. After a winter's absence, the stork will return to the same steeple, the swallow to the same roof; and the nightingale to the same nest which they before occupied. Vimont remarks that it is generally large in the fox, ourang-outang and cat. He mentions two cats, in one of which it was small, and in the other large; the first would not steal except when very hungry; the other would do so on all occasions. He once gorged it with as much fish as it would eat, and then left it in the room where a piece of veal was on the table: and coming in shortly after, he found that the cat had stolen it.

It is difficult to describe the natural language of this faculty; but after once seeing it well manifested it is not soon forgotten; when predominant it gives a lean, hungry, mean aspect, and, when combined with Secretiveness, a one-sided, creeping, sneaking look, half-shut eyes and closed mouth. To use a common expression, such a man seems as if he could skin a flint. His hands often go out at the side as if bent upon grasping something.

LECTURE VI.

9. CONSTRUCTIVENESS.

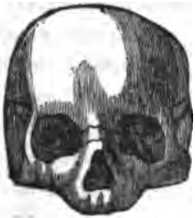
THIS organ is situated at that part of the frontal bone which lies behind and above the superior and outer angle of the eye, immediately above the sphenoido-temporal suture, and before Acquisitiveness. In the brain it occupies the posterior part of the anterior lobe. Dr. Gall discovered it by noticing that men distinguished for mechanical genius are very wide in this region. After this discovery some gentlemen of Vienna presented to him a person concerning whose talents they solicited his opinion. He told them that he ought to have a great tendency toward mechanics. They then told Gall that he had been examining the famous painter, Unterbergen, and expressed dissatisfaction at the decision; but the painter acknowledged that the Doctor was correct—that he had always had a passion for mechanics, and that he painted only for a livelihood. He also took the party to his house, where he showed them many machines and instruments, some of which he had invented and others improved. Besides, Constructiveness is an element in the art of painting.

Dr. Barclay used to exhibit to his pupils the skulls of the lion and other carnivorous animals, and ridicule the Phrenologists for ascribing the narrowness of this region in those animals to their deficiency in Constructiveness. "The lion, gentlemen," he would say, "has very strong temporal muscles, for the purpose of empowering its jaws to masticate flesh and bones: now it is evident that the play of these muscles compresses the head in this region, and causes this remarkable narrowness." This seems plausible, but had the Professor carried his observations far enough, he would have found that the form of head alluded to occurs in the *fœtus* of carnivorous animals, and cannot, therefore, be the effect of the action of their jaws on hard substances. Further, the beaver eats through pretty strong logs of timber with its teeth, and its temporal muscles are strong, yet the head is very broad in this region as you may see in this skull, and on putting my finger within, I find a hollow corresponding with the external protuberance.

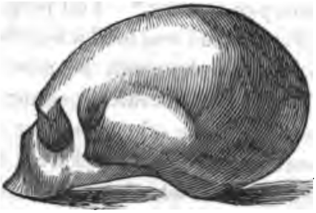
The temporal muscle covers this organ and part of Acquisitiveness, and differs in thickness in different persons. It is therefore necessary to estimate its thickness in the living head, by feeling at the muscle while the individual moves his lower jaw as in biting.

To construct, means to put detached materials together so as to make a single object. This faculty, however, seems to be a tendency to *fashion* in general, which may be done by putting materials together, or by chipping off fragments, or by moulding, or by drawing lines and laying on colours. It does not *invent:* but merely fashions or configurates, though when large it stimulates the understanding to invent what will employ it agreeably in constructing. It takes its direction from the other faculties. Combined with large Weight, it leads to machine-making; with Ideality and Form, to statuary; with these and Colour, to painting.

Compare these heads: in this of Franklin, it is small; in this, of Canova, very large. The development is very small, as you see, in the New-Hollanders, and of all mankind they are the least constructive. When visited by Capt. Cook, they were naked, built no houses, and had no implements of agriculture, fishing or hunting. They were destitute, in short, of every art which can add comfort or decency to life, depending for a subsistence on spontaneous vegetation, and the fishes which are left by the tide among the rocks. Com-



[1] *Ancient Greek.*



[2] *New Hollander.*

pare it with this of an ancient Greek [1] or with this of an Italian: the difference in favour of the latter is enormous! This Italian skull known to be at least two hundred years old, was supposed to be that of Raphael, and was preserved as such in St. Luke's Academy at Rome; but as Raphael's skull has been recently discovered, objectors say that this mistake refutes phrenology. All that they can make of the case, however, is, that it did not belong to Raphael, but as they cannot tell to whom it belonged, they cannot specify what talents or disposition its owner possessed. We see here large organs of Amativeness, Constructiveness, Imitation, and Ideality; faculties by which Raphael was distinguished. If the objectors could show that the real owner of the skull did not manifest these faculties, this would be a fact against Phrenology; but while his character is unknown, the skull is merely a specimen of the development of particular organs and affords no evidence either for or against Phrenology. Compare the head of Napoleon, in whom Constructiveness was small, with the head of Brunel, the celebrated engineer of the Thames Tunnel, and the inventor of machinery for making blocks by means of steam for the rigging of ships. Here is the head of Sir Wm. Herschell, in whom it is very large, and the construction of a superior telescope was the principal foundation of his fame.

This organ is of great service to operative surgeons, engravers, cabinet makers, tailors and dress-makers. We find some men who for want of it cannot mend a pen nor sharpen a razor.* You perceive it small in the Rev. Mr Martin, who was bred a watch-maker, but taking no interest in the employment, he gave it up and turned preacher. Lucian and Socrates renounced sculpture for the same reason. On the other hand, we often find men whom circumstances have prevented from following their natural inclination, and whose occupations do not lead them to its exercise, occupying themselves with mechanics as a pastime and amusement. An eminent Scotch barrister told me that in the very act of composing a pleading on the most abstruse questions of law, vivid conceptions of mechanical improvements would dart into his mind, and that he often had to leave his employment to embody them in a diagram in order to get rid of the intruders, or "lay the devil," as he said. Leopold I., Peter the Great, and Louis XVI constructed locks. The late Lord President Blair, in whom this organ was large, had a private workshop in which he constructed pieces of mechanism.

Constructiveness is sometimes large when Intellect is deficient. Thus, some of the cretins of Switzerland are employed in making watches. Dr. Rush mentions two cases in which a talent for Design had unfolded itself during a fit of insanity; and he adds, that there is no insane hospital in which examples are not found, of constructive talent suddenly developing itself in certain patients in their insane condition.

The natural language of this organ is to turn the head sidewise, in the direction of the organ. Dr. Spurzheim remarked that women in whom it is large, when entering a milliner's shop, turn their heads on one side toward the article they are examining. I have observed that children with it large, in learning to write, move their heads with their pens, and delight in flourishes; while those with it small hold their heads still and upright, and write stiff crabbed hands. This is a hint to writing-masters to let the heads of their pupils alone, for their instinctive movement or position will best aid the mind and the hand.

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* Excellence in these operations depends much upon the organ of Weight.

SENTIMENTS.

We now come to that genus of the faculties called Sentiments. Some of these are common to man and the lower animals; others are peculiar to man. The former are styled the Inferior Sentiments: of them I shall treat first, and begin with

SELF-ESTEEM.

This organ lies at the crown of the head, just above the sagittal angle of the parietal bones. When large, the head runs far upward and backward from the ear in this direction. It can be readily found by noticing that it lies on the middle line, in the superior part of the back of the head, and never occupies any portion of the head which looks directly upward.

Man, placed as he is in a universe of worlds, surrounded by objects vast and magnificent, would be apt to have an overwhelming idea of his own insignificance, and exclaim, despondingly, 'What is man, O Lord, that thou art mindful of him?' did not this organ give to him due importance in his own eyes, and impart that degree of satisfaction with self which leaves the mind open to the enjoyment of the bounties of Providence and the amenities of life; and inspires him with that confidence in his own powers which is essential to every great achievement, and even to the proper application of his faculties in the every-day business of life. Some have expressed their surprise that there should be an organ for esteeming one's self, seeing that humility is a virtue; but they forget that humility is the opposite of arrogance, not of proper self-respect.

Gall discovered this organ by noticing the head of a beggar who had inherited a considerable fortune from his father, but thought it beneath him to apply to business, either for its preservation or for the acquisition of a new one. Gall moulded his head, and, on examining it with attention, found the organ of Cautiousness small, with a small head in general, but this part much developed. He pursued his inquiries and finally established the organ.

This cast, which was given to me at Boston, is very long upward and backward from the ear. I was told that the gentleman whose head it represents manifests the feeling to a most ridiculous extent. Love of Approbation lies on the sides of Self-Esteem. When large it gives remarkable fullness and breadth to the upper and back part of the head. I will present some heads to you in which these two organs are in various states of development. This is the Boston head, in which Self-Esteem is large and Love of Approbation small. This is the head of Mrs. H., in which Self-Esteem is small and Love of Approbation large. This is the head of the Rev. Mr. Martin, in which both organs are large. Here are three others: this is the head of an Irish soldier who shot three men; in it Self-Esteem is very large and Love of Approbation very small. This is the head of François Cordonnier, the French poet, in which Self-Esteem is small and Love of Approbation very large. This is the head of Sheridan, in which both organs are large.

The proper development of Self-Esteem is an essential element in a great character; but when too large it produces arrogance, superciliousness and selfishness, and in children pettishness and wilfulness of temper. The man of inordinate Self-Esteem is a world unto himself, to which all things must concentrate; a standard to which the manners, morals and opinions of others ought, he thinks, to conform. This feeling in predominance is, to a great extent, the fountain of that intolerant zeal so frequently manifested by professing Christians on behalf of their sectarian views. "There is no grace," says Cowper, "that the spirit of self can counterfeit with more success than a religious zeal. A man thinks he is fighting for God, when he is merely fighting for his own notions. He thinks he is skilfully searching the hearts of others, when he is only gratifying the malignity of his own; and charitably supposes his hearers destitute of all grace, that he may shine the more in his own eyes by comparison. When he has performed this notable task, he wonders that they are not converted: he has given it to them soundly, and if they do not tremble and confess that God is in him of a truth, he gives them up as reprobate, incorrigible, and lost for ever." Cowper was a sincerely religious man, and in this description he represents that dogmatic Self-Esteem which arrogates to itself infallibility and which is found in some individuals of all sects.

There is at this time a great war going on in my own country between two religious parties, one of which has certain endowments which the other thinks it ought not to have. A minister of the established church, making a speech at one of their meetings, maintained that the *true* religion should be endowed; "But," said he, "it is asked which is the true religion? I answer, *ours* is the true religion." This assertion, which was merely an amusing manifestation of Self-Esteem, was received with loud applause.

The person in whom this organ is too small is often unable to pursue even a virtuous course, through diffidence of his own judgment. Inferior talents, combined with a strong endowment of Self-Esteem, are often crowned with far higher success than more splendid abilities joined with this sentiment feebly developed. Dr. Adam Smith remarks that it is better to have too much than too little; because, if we pretend to more than we are entitled to, the world will will give us credit for at least what we possess; whereas, if we pretend to less, we shall be taken at our word, and mankind will rarely have the justice to raise us to our true merit.

The fancied superiority of self produces the enjoyment of detraction. People take their neighbours down a peg that themselves may appear a peg higher. *Envy* is the result of Self-Esteem and Destructiveness. The former is offended at the superior happiness, excellence, wealth or station, of others, the latter hates them for it. This organ renders true the saying 'that we always finds something to console us for the misfortunes of our neighbours.' It is extremely active in society. In my own country the learned professions look down upon and despise the merchants as a plodding set, and the merchants look down upon the manufacturers, the wholesale dealers look down upon the retail dealers, and these look down upon the handicrafts—and the men of title look down upon and despise all. These are strange fantastic tricks, from the spirit of which this country is by no means free.

Predominant Self-Esteem, renders men quite satisfied with themselves, and with whatever belongs to them. Madame de Staël describes its effect on even a powerful mind. He spent his time, she remarks, in admiring the astonishing magnificence of his own abilities and attainments. Men possessing this organ and Benevolence large, have a solemn, good-natured, patronizing air, and are apt to address others with the epithets, 'My good sir,' 'My good fellow,' and the like.

Self-Esteem is large in the North American Indians, who are remarkable for pride and personal dignity. Also in the English and Americans, and is the foundation of that love of liberty which characterizes this arrogant and turbulent race. It produces that egotism, that proneness to use the emphatic *I*—'*I* did this; *I* said that'—which characterizes the discourse of some people. During the wars of the French Revolution, when the British nation was struggling for existence against all Europe, excluded from the continent, and mostly confined to their island, their patriotism was invoked in all modes, and their Self-Esteem continually stimulated. They thus learned to consider themselves the most civilized people in the world, and were greatly astonished on visiting the Continent after the peace, to find any great, good and amiable quality as abundant elsewhere as at home. This country, from its remoteness from other civilized nations, is in a situation similar to that of England during the war. It has no standard by which to compare itself, except itself, and I see a good deal of the same overestimate of its own attainments which characterized the English during the period of their isolation.

Self-Esteem often restrains men from forming improper connections, when combined with large moral organs it inspires with the dislike of every thing mean and contemptible in behaviour. Combined with Acquisitiveness, it produces a disposition to acquire and keep property. This combination with deficient Benevolence constitutes a miser; with Acquisitiveness, Love of Approbation, Ideality and Form, it leads people to collect works of art; with these and Colour, to collect paintings; with Acquisitiveness, Self-Esteem and Veneration, to a passion for uniques. It has been said that but three farthings were coined during Queen Ann's reign. This combination would prompt its possessor to give one hundred pounds for one of these farthings, and one thousand pounds if the other two were destroyed. It appears to be the secret satisfaction of thinking that "In possessing this article I am superior to, and unrivalled by all the world," which gives the love of uniques.

When diseased, the organ leads patients to consider themselves great personages, as kings, queens, generals, great poets, or even as God himself. It is larger in men than women; and the former are more liable than the latter to insanity from pride. Its natural language is a strut in the gait, a lofty carriage of the head, and a repulsive manner and tone of voice. When much excited, it draws the head back. You see the natural language expressed in the most striking manner in this caricature of Louis XVIII. It was printed at the time that there was a contention between this King and the people about a charter. The French, very reasonably in my opinion, thought that France belonged to them, and that they had a right to form their own charter. Louis thought that France belonged to him, and he out of the plenitude of his condescension would bestow a charter upon them. They revenged themselves by drawing him in this attitude, with about as much contempt in his face and manner as if he were giving to a dog a bone. I mentioned that while the Rev. Edward Irving was a student, I examined his head and found very large Self-Esteem. This represents him in the pulpit: you see he is drawn back in the attitude of self-importance. It is easy to perceive that he is winding up a period in which he tells his hearers, that he has done his duty, and that if they will go to perdition, their blood will be upon their own head. Here is the full-length portrait of a lady: her erect and composed attitude indicates the presence of this organ. At the close of a battle between two cocks, you see the abasement and exhaltation of this organ. The one slinks away with his head down, and the other stretches up his head and proudly struts while issuing a victorious crow. Self-abasement bows the head into a direction contrary to that of Self-Esteem, as in this beautiful representation of our Saviour, who is supposed to be saying: 'Thy will be done.' The prostration of the whole person on the ground before Eastern potentates, is meant to indicate the abasement of self. It is the attitude the very opposite of that of pride and self-importance.

11. LOVE OF APPROBATION.

I have pointed out the direction of this organ, and presented to you a number of specimens. Dr. Gall met with a woman in a lunatic asylum who fancied herself the Queen of France. He expected to find the region of Self-Esteem largely developed, but instead, there was a distinct hollow and a large round protuberance on each side. This at first caused him much embarrassment. But he soon perceived that this woman's insanity differed much from that of men alienated through pride. The latter affected a masculine majesty, and were grave, calm, imperious, elevated, arrogant. This woman, on the contrary, manifested a restless frivolity, an inexhaustible talkativeness, affected forwardness, eagerness to announce high birth and boundless riches, promises of favour and honour. She solicited attention, and strove by every means to obtain admiration. From that time he perceived the difference between Self-Esteem and Love of Approbation.

Love of Approbation is the drill-sergeant of society, and admonishes us when we depart too widely from the line of march. It is the butt, on which wit strikes, and which enables ridicule to shame us out of faults and improprieties. When excessive, it craves for compliments, is led by fashion, and ever asks, before adopting a course of conduct, what will the world think of it? It leads men to give openly, that they may receive praise. He in whom it is large feels rebuffs keenly, and a thousand things occasion excessive pain, which pass over one in whom Self-Esteem is large without exciting attention. In the French, Love of Approbation is predominant, and they think the English cold, haughty and arrogant. In the English, Self-Esteem is predominant, and they think the French low-spirited, fawning and trifling.

Love of Approbation combined with Benevolence, produces politeness and a desire to please; with Self-Esteem, love of fame; with Alimentiveness, it leads men to boast of feats in eating and drinking, producing the *four-bottle* men, whom Lord Chesterfield in *charity* calls *liars*, because, if he believed them, he should call them beasts. Combined with Ideality without large Intellect, it produces love of dress and ornament, and ambition to lead the fashions; with Ideality and Constructiveness, love of works of art. Combined with Language, it produces a fondness for composition, for love of fame as an author; with Acquisitiveness, it produces admiration of wealth; with Combativeness and an otherwise low organization, it forms the *bully*, who loves to be considered the best fighter in his neighbourhood.

Love of Approbation is the foundation of that love of distinction and of titles which is so common in my own country, and from which this country is by no means free. Your institutions exclude artificial distinctions of rank, but I perceive that such titles of honour and dignity as do exist among you, are as eagerly sought after, as the titles of rank in England. The faculty exists here as everywhere else, and it desires such distinctions as it can attain. The love of decorations and ornaments, whether these consist of stars, garters and medals, or of tattooed faces, bored noses and eagles' feathers, springs from this organ. We find some men who are apt to captivate us very quickly by their attentive and repectful manner, but we often discover that all their attentions are bestowed for the purpose of obtaining approbation and praise for themselves.

Dr. Gall draws with great accuracy the distinction between Pride, which is an abuse of Self-Esteem and Vanity, which is an abuse of the organ of which we are now treating.—" The *proud* man," says he, " is imbued with a sentiment of his own superior merit, and from the summit of his grandeur treats with contempt or indifference all other mortals; the *vain* man attaches the utmost importance to the opinions entertained of him by others, and seeks with eagerness to gain their approbation. The *proud* man expects the world will come to him and acknowledge his merit; the *vain* man knocks at every door to draw attention toward him and supplicates for the smallest portion of honour. The *proud* man despises those marks of distinction which on the *vain* confer the most perfect delight. The *proud* man is disgusted by indiscreet eulogiums; the *vain* man inhales with ecstasy the incense of flattery, although profusely offered, and with no very skilful hand."

This faculty is too much cultivated in education, by being almost universally appealed to as the chief stimulus to exertion and good behaviour. It is only where improper subjects are taught, or proper ones are taught improperly, that such appeals are required. In excessive activity it prompts to the equivocation, 'not at home,' which in this country is much less used than in Britain. Here ladies are not ashamed to announce the truth that "they are particularly engaged and find it inconvenient to see company." Love of Approbation, as well as Self-Esteem, prompts to the use of the first person; but its tone is that of courteous solicitation, while that of Self-Esteem is arrogant and presumptuous.

When this organ is deficient, the individual cares little for the opinion of others; and if the selfish propensities predominate, the combination produces what are called 'impracticable' men, whose whole feelings are concentrated on self. Rebuffs and indignities never affect them. Free from restraints of delicacy, they practise upon the benevolence, the friendship, the interest of others, and often achieve their ends in spite of obstacles which to a sensitive mind would have been insurmountable.

The *natural language* of this feeling is to carry the head backward, and a little to the side; it imparts to the voice a soft, soliciting tone, clothes the countenance in smiles, and produces in the lips that elegant line of beauty which resembles Apollo's bow. You see the natural language well manifested in this drawing. A lady, after I had delivered this lecture on one occasion, told me that she was surprised at my not exhibiting the natural language of the faculty in a drawing of a dandy. "Look at him" said she "with his hair hanging in ringlets or carefully rounded out at the side into a fascinating curl; he wears a little, low crowned and broad brimmed hat, stuck jauntily on the side of his head ; his coat is fitted to his back like a tailor's show-figure, and his head is reclining gently backwards and to one side, while simpering smiles bedeck his countenance ; he is the very personification of Love of Approbation." I thanked the lady for her portrait, and if any friend will draw it for me in black chalk, I shall have great pleasure in doing justice to the ladies by placing the 'dandy' along side of the female figure which you here see.*

A young lady, a relative of my own, went to a boarding school, the governess of which was very particular about the manners of her pupils; and, among other things, she taught the young ladies that the proper attitude for a lady, was to hold the head and figure in the position represented in this drawing, the head thrown gently back, and inclining to one side, in short, in the position naturally adopted when Love of Approbation predominates. In my young relative, Self-Esteem and Firmness were rather large, and consequently it was natural for her to hold her head erect. She did her best, however, to follow directions; but after sitting for some time with her head on one side, she took a pain or crick in her neck, and had to resume her natural position. She would then get a scolding, would again try to hold her head in the required position, but the crick would again come; and finally the governess gave up the attempt, remarking that she did very well in every thing else, but that in her attitudes she was excessively awkward and incorrigibly vulgar. I subsequently saw this lady, and remarked that in her head Love of Approbation was enormous, and that she naturally threw her head in this position ; and because it was natural to her, she conceived it to be the beau ideal of graceful position. The upright attitude of Firmness, which she condemned as vulgar, was more agreeable to my taste, than the simpering attitude of Love of Approbation which she commended; but every one will prefer the attitude which harmonises with his own predominant faculties.

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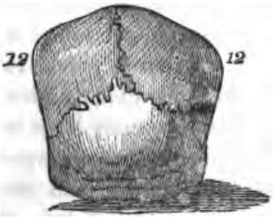
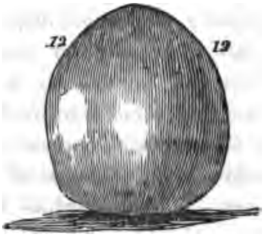
* "Every one knows that in the south of France, they decorate the mules with bonquets when they travel well. The most painful punishment which can be inflicted on them, is to deprive them of their bouquet, and tie them to the back of the carriage. I have a female ape, whenever they give her a handkerchief, she throws it over her, and takes a wonderful deal of pleasure in seeing it drag behind, like the train of a court-robe. Gall, iv. 190.

12. Cautiousness.



Cingalese boy.



French skull.

This organ is situated near the middle of the parietal bone, where ossification generally commences, and beneath what are called the parietal protuberances. Compare these skulls: This was picked up on the plain of Waterloo; you see that it seems truncated. In this, the skull of a Cingalese boy, the size is immense.

This organ is the fountain of *fear*, or the instinct of self-preservation. Gall was struck by the extreme irresolution of a clergyman of Vienna, who could never decide upon any thing. A few days afterward, at an examination of a public school, this clergyman sat beside a Counsellor of State, of the same irresolute character, and so proverbial for his indecision as to have received the nick-name of *Cacadubio*. Dr. Gall observed the great projection of their heads in this region. Conceiving that Indecision and Circumspection might be connected with this particular part of the brain, he pursued his investigations, and soon verified his conjecture.

Fear appears to me the primitive feeling of this organ.

Fear cannot be the absence of courage, as it is a positive emotion, which the negation of a quality cannot produce. The tendency of this sentiment is to make the individual apprehend danger, to make him keep a constant look-out, to hesitate before he acts, and to look to consequences, that he may be assured of safety. A full development is essential to a prudent character.

When the organ is too large, it produces a wavering, doubting, undecided disposition, and may occasion an absolute incapacity for vigorous and decided conduct. A great and involuntary activity of it constitutes *panic*, in which the mind is hurried away by an irresistible emotion of fear. I have noticed that it is almost invariably large in children, and we must all admire this providential arrangement. It is a guardian better than fifty nurses, and the place of which no external care can supply. A boy of six years of age, in whom it was very small, took off his clothes, and was about to jump into an old quarry full of water after his cap, which had been blown into it, when he was stopped by a passer-by. His mother was continually in alarm about him; danger he seemed incapable of comprehending. The boy subsequently died; and the mother, after the first emotions of grief were over, expressed her thankfulness that he had passed away.

Another lady was very apprehensive for her little son, who had a disposition to climb and perform other feats of activity. Perceiving his Love of Approbation and Cautiousness large, I told her that the boy performed his feats to gratify the first, and would not undertake them unless observed. Therefore her remedy was to let him alone, for his Cautiousness would guard him from danger. She took no notice of his feats of climbing and he gave them up.

When this organ is small, and Hope large, the future seems full of joy and gladness; there is a confident looking forward for brilliant success, with, too often, a neglect of the means. A person so organized seems to think that all desirable things will come at a future time. He is subject, however, to visitations of disappointment; Hope does not fulfil her promises, and a pang follows. Elasticity is, however, soon regained, another alluring object presents itself, which, in its turn eludes his grasp.

When Cautiousness is large and Hope small, the present cannot be enjoyed, on account of fearful forebodings. The future seems dark and cheerless, and evils are suffered by anticipation which are never realized in fact. It may be diseased; in fact, in the old country it is more often diseased than any other organ. When it is so, it gives most fearful apprehensions. A lady, in whom it was morbidly affected, rose thirteen times in one night to see if her children were alive. In this case, Philoprogenitiveness also was large. When the organ is in this diseased condition people often try to laugh the patient out of his notions; they might as well try to laugh him out of the tooth-ache. The rational way is to subject him to a course of moral and physical treatment, adapted to the peculiarities of his case.

In Dr. Dodd, who was executed for forgery, this organ as you perceive, is very small. Compare it with this of the Rev. Mr. Martin, or this of King Robert Bruce. Dodd was brought up for private examination before the Earl of Chesterfield and a magistrate. His case excited very painful sensations, and they got up and went out of the room, in which there was a fire, leaving Dr. Dodd with the papers by which alone he could be convicted, hoping that he would destroy them; but on their return they found, with horror and surprise, that he had not done so.

Suicides have generally this organ and Destructiveness large, and Hope small. Cautiousness, when stimulated to excess, gives rise to intense melancholy, anguish and anxiety; and by thus rendering life extremely miserable, it indirectly promp's to this result. Let no one suppose suicide to result from mere error of judgment. It proceeds from internal and involuntary feelings of a diseased nature, the misery and torments of which, he who has never felt them cannot accurately conceive. I once knew a case of suicide, however, from this combination: large Self-Esteem, Combativeness, Destructiveness, and Firmness. The suicide was a boy of thirteen years of age, whose brother, after trying various other modes of reclaiming him from vicious conduct, had severely beaten him. The boy, seeing no other mode of revenge, hanged himself; and so firm was his resolve, that he kept his legs drawn up to the body, lest they might touch the floor.

This faculty gives a tendency to open the eyes wide, to roll the eye-balls, and to turn the head from side to side; from which arises the term *Circumspection.* A hare surprised in a field, sitting on its hind legs, with its eyes open, and its head moving anxiously from side to side, is a fine example of this expression. The natural language of Destructiveness, Secretiveness and Cautiousness, is well expressed by Sir Walter Scott, in his 'Lord of the Isles:'

For evil seemed that old man's eye—
Dark and designing, fierce, yet shy;
Still, he avoided forward look,
But slow and circumspectly took
A circling, never-ceasing glance,
By doubt and cunning marked at once,
Which shot a mischief-boding ray
From under eye-brows shagged and gray."

LECTURE VII.

SUPERIOR SENTIMENTS.

I NOW come to what are called the *Superior Sentiments*, or such as constitute the peculiarly human character. Of these, however, Benevolence and Imitation are found also in the inferior animals. The best rule for ascertaining the size of the coronal region, the seat of these sentiments, is the following: The centre of Causality corresponds to the point of ossification in the frontal bone, and the centre of Cautiousness to the point of ossification in the parietal bone, all that part of the head which lies above these points belongs to the Moral Sentiments, allowing a little for Causality and a little for Cautiousness. Pass a string, therefore, round the head over these points, and if that part of it which lies above a plane, of which this string is the boundary, be low and flat, you may rest assured that the Moral Sentiments are small; if it be high and broad, you may be certain that they are large.* The best cord I have used for this purpose is formed of zinc overlapped with black ribbon or tape, it is very flexible and is kept in place by the force of gravity. I shall now treat of the individual organs, and first of

13. BENEVOLENCE.

This organ is situated at the fore part of the top of the head, on each side of the middle line, and anterior to the fontanelle. A friend of Gall, knowing that he had sough external manifestations of mental qualities, requested him to examine the head of a servant remarkable for his amiable disposition and *goodness of heart*, as it is called. "It is impossible," said he, "to find a greater degree of goodness than that young man possesses." Gall complied with the request, and perceived a prominence of the frontal bone. He recollected a school-mate who had the like amiable temper; and he was requested by a lady to examine the head of her son, also very amiable. He found all their heads much developed in this region; by examination of others he was convinced that the disposition to do good is innate, and that here is its organ.

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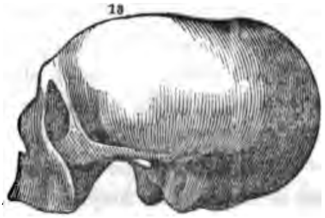
* See the figure at the commencement of Lecture ninth.

This sentiment prompts to acts like that of the Good Samaritan. Those who have it strong do good without regard to fame, and do not complain of ingratitude; they manifest a warmth and simplicity of manner, and a directness of purpose which touch the heart at once—while those who do good from love of approbation seek witnesses, boast of their goodness, and evince a coldness and restraint which betray their true feelings. See how large it is in Henry IV. of France; beautifully did he manifest it in his character. When urged to injure an officer who had taken part against him, he replied, "I will do him so much good that he will be forced to love me." When desired to destroy a town which he had conquered, he replied, "The pleasure which results from gratified revenge lasts but for a moment; that which flows from mercy is eternal." Fenelon exhibited a most beautiful manifestation of it when he said, "I am a true *Frenchman*, and love my *country;* but I love mankind better than my country." Hobbes resolves its manifestation into selfishness. Pleasure indeed is, by a beautiful arrangement of the Creator, made a concomitant of benevolent acts, but it is not for the pleasure that the acts are performed. The man who sees another fall into the water and leaps in to save him, must feel great delight, if successful, but not for this did he risk his life.

The organ is very distinctly developed in the head of Jacob Jarvis, of Cork, who could never resist any solicitation. When his wife saw any one coming whom she supposed about to request something, she had to lock the door or he had to hide himself. The organ is extremely developed in

Eustache.

the head of the negro Eustache, whose merits were publicly acknowledged by the Institute of France, from which, in 1832, he received the Prize of Virtue. During the contests which followed on the attempts of the French to restore slavery in St. Domingo, the disinterested exertions of Eustache in behalf of his master M. Belin, were unbounded. By his address, courage, and devotion, this gentleman, with upward of four hundred other Whites, were saved from the general massacre, and the fortune of M. Belin several times preserved. At Paris, the profits of his industry and the rewards he obtained were all employed in relieving the miserable. At Port au Prince he often heard his master, who was an old man, deplore the gradual weakening of his eyes. Eustache could not read, but, inspired with the hope of pleasing his master, he applied himself secretly to study, took lessons at four o' clock in the morning, that he might not encroach on the time required for his regular duties, and speedily acquired the wished for kowledge. Approaching the old man with a book in his hand, he proved to him, that if nothing seems easy to ignorance, nothing is impossible to devotion. I again show you the cast, as it is one of the most beautiful demonstrations of this organ which we possess. Contrast it with this of Griffiths the murderer.



Griffiths.

The idea that benevolence can manifest itself only by giving alms or money, is a vulgar error. It is benevolence toward those with whom we live, to order our arrangements with a due regard to their comfort, and not to deny them proper gratifications; it is benevolent to suppress our humours and impulses, when these would occasion unnecessary pain to others; it is benevolent in giving orders, to restrain Self-Esteem, and, in censuring, to be mild and merciful; it is benevolent to be courteous and considerate to those in humble station. Benevolence, too, is an essential element in true politeness. I knew a gentleman in whom this organ was large, but combined with large Acquisitiveness and Self-Esteem. He had much leisure time, and would devote whole days to the promotion of benevolent purposes, but very seldom gave pecuniary aid.

Deficient Benevolence does not produce cruelty, but it leads to regardlessness of the welfare of others; and when small, a powerful restraint is removed from the propensities. Let Benevolence be absent from those who attend the sick, and there is no ever-gushing well-spring of goodness. One who has large Conscientiousness may be faithful as a matter of *duty*, but will not manifest that uniform kindness and gentleness, that softness and sympathy, which is so gratifying, soothing and important. I have never known it small in a regular stewardess in a sea-going ship or steamboat, which may be accounted for from the fact, that one in whom the organ was deficient would soon become disgusted with her duties and find other employment, or be discharged for neglect. We have more than a hundred skulls of murderers, and in almost all we find Benevolence very small. In the cases in which it is large, the murders have generally been committed either after provocation, or on the impulse of the moment. Persons in whom the organ is small, and Acquisitiveness and Self-Esteem large, attribute every thing to selfishness; and if Destructiveness be large, they cannot realize that even the Deity himself can take pleasure in doing good, their mind is exposed to the influence of the lower feelings, their temper is apt to become cold, harsh, sour and unhappy; they have little sympathy with enjoyment; the face of creation appears not to smile; moral and physical objects are viewed on their darkest sides, and they steel themselves with malignity

Destructiveness and Benevolence do not neutralize each other, but Destructiveness may, in some instances, even aid Benevolence. An army going to battle is emblematic of the activity of these two faculties, it marches forward equipped for the work of destruction, yet surgeons attend for the purpose of succouring those on whom the calamities of war may fall. Without Combativeness and Destructiveness there would be no war; and without Benevolence, neither mercy nor compassion.

This organ is found in the lower animals, and its development may be ascertained. When the horse is hollow and narrow in the middle of the forehead just above its eyes, it is invariably vicious, and disposed to bite and kick. In mild and good-natured horses, the contrary form is always present. In cats and dogs the same rule holds good; and that great differences exist in these animals all know. Some cats will allow themselves to be played with and handled by children, without ever striking, except with their sheathed claws; some scratch at all who incommode them in the slightest degree. Some dogs will precipitate themselves into the water to save persons who have fallen in.

Benevolence may, however, be abused. Conscientiousness is required to stay the hand till justice be satisfied, and firmness to resist the impulses of Benevolence till reason has decided on the propriety of the proposed mode of manifestation. By indiscriminate alms-giving, profligacy and idleness may be encouraged, and reckless dissipation fostered.

In disease this organ may be preternaturally active. It is often active, too, in idiots. "I once knew a man," says Dr. Rush, "who discovered no one mark of reason, who possessed the moral sense or faculty in so high a degree that he spent his whole life in acts of Benevolence. He was not only inoffensive, (which is not always the case with with idiots,) but he was kind and affectionate to every body."

This organ generally gives great sweetness to the voice, kindness and tenderness to the manner.

14. VENERATION.

This organ is situated exactly in the centre of the coronal region, at the fontanelle, behind Benevolence. Dr. Gall's father had ten children, one of whom was devout from childhood and wished to become a priest, but was made a merchant. Unhappy in this business, he abandoned it at the age of twenty-three, and took orders. Dr. Gall was intended for the church, but having no partiality for it, left it for the study of medicine. Gall observed a variety of dispositions among children at the schools, for which nobody could account; some being pious, others being quite the reverse. This led him to believe the religious sentiment to be innate. He examined the heads of religious people, and finally found a prominence in this region. This was remarkable in his brother, in the portraits of eminent saints, and in antique statues of high priests. He entered the Catholic churches, always open in Europe, and saw the same marks in the greatest devotees—and finally established the organ.

This organ produces the sentiment of Veneration in general, and the tendency to worship. It is a mere impulse, however, and if the understanding be limited, and no revelation have reached the individual, the unfortunate being may worship the genius of the storm, the source of light and heat, or even brutes, stocks and stones.

It has been said that with this organ man has no need of a revelation. But Dr. Gall has well remarked that it was absolutely necessary to fit man for the reception of revelation; if Veneration be of itself blind, nothing is more reasonable than that it should receive guidance. From this organ he draws an argument to the existence of God. Destructiveness is implanted in the mind, and animals exist around us to be killed for our sustenance. Adhesiveness and Philoprogenitiveness are given, and friends and children are provided as objects on which they may be exercised. Benevolence exists, and the unhappy and unfortunate are every where around us, on whom its benign radiance may be shed. So man has the instinctive tendency to adore, and we may reasonably infer that a God exists as its object. This argument has, of course, only the force of an analogy.

You perceive this region very much developed in King Robert Bruce, who manifested the faculty strongly. Benevolence was rather small in him, and he stained his name by many acts of cruelty and many unnecessary executions. But he was always devout. He vowed that he would visit Jerusalem, but being unable to do so, made one of his bravest Knights swear to cut out his heart after death and carry it thither. The heart was cut out, but the Knight was killed on the journey. The body of Bruce was, in part, recognised by the ribs having been sawn away on the left side. Compare the head of Bruce with this of Thurtell, in which it is very small. Recollect that you must measure the elevation of the organ above a plane passing through the frontal and parietal protuberances; because, if Firmness and Benevolence be very large, it may seem depressed, when it is in fact considerable.

This organ is represented large in the portraits of eminently religious persons. It is represented as very large in this head of Christ, by Raphael. The parts behind the ear, or the organs common to man and the lower animals, are small; whereas the organs situated in the forehead and coronal region are very large, indicating great intellect and exalted Benevolence and Veneration. Dr. Gall puts this question: Has this divine form been invented, or may we presume that it is a faithful copy of the original? It is possible, he continues, that artists may have imitated the heads of the most virtuous, just and benevolent men, and thence drawn the head of Christ. But it is more probable that the general figure of the head of Christ has been transmitted to us. St. Luke was a painter, and how should he fail to preserve the features of his Master? It is certain that this form of the head of Christ is of very high antiquity: we find it in mosaics, and in the most ancient paintings. The Gnostics of the second century possessed images of Jesus and of St. Paul. He concludes, therefore, that neither Raphael nor any other artist invented this admirable configuration.

Metaphysicians in general do not admit an original tendency to worship. We perceive order, beauty, harmony, power, wisdom and goodness, say they, in the works of creation, and infer the existence of a Supreme Creator and Director, whom we thus feel constrained to admire and adore. We admit that the understanding of man sees through Nature up to Nature's God. But there it stops. It perceives facts and draws inferences, but does not feel emotions. Phrenology, therefore, goes further, and proves the existence of a sentiment the tendency of which is to adore. And that our view is correct, the universal prevalence of this tendency fully proves—Where the understanding is feeblest the emotion is often the strongest. Men cut down branches from trees and worship them; they hew out a rude figure and adore it; they prostrate themselves before reptiles and monsters—facts utterly incompatible with the notion that man worships as the result of a process of reasoning.*

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* Derham, Paley and others, who attempt to prove against atheists the existence of God, commence by showing, that on examining a watch, or other piece of mechanism, we perceive manifestations of design, and intelligence. Transferring the ideas thus obtained, to supernatural things, they construct the following syllogism: "Whatever indicates marks of design must have had an intelligent author. The world indicates marks

This organ gives respect for age and deference toward superiors in rank. In children it is a chief ingredient in filial piety, and produces that soft and almost holy reverence with which a child looks up to its parent. If this organ be small, but Benevolence and Adhesiveness large, children may live with their parents as friends and be to them very kind and attentive; but there will be little of that deferential

of design; therefore, The world must have had an intelligent author." I shall not stop to question the admissibility of such transference, but remark, that, to support the conclusion, it is obviously necessary that the argument be thus laid down or understood: whatever indicates marks of *superhuman* design, must have had an intelligent, *superhuman* author. The world exhibits marks of *superhuman* design; therefore: The world must have had an intelligent, *superhuman* author. But so stated, it is inadmissible as proof against the atheist. For what is an argument? simply an expression in which from something laid down *as granted*, something else is deduced, it is a mode of proving that what is *admitted to be true* of a certain term, is also true of a subordinate term, by showing that the latter is in fact contained in the former; thus when we say, Every man is mortal. Thomas is a man; therefore: Thomas is mortal. If the manhood of Thomas be admitted, it is evident that the conclusion "Thomas is mortal" is virtually asserted in the proposition, "Every man is mortal." Seeing that Thomas is one of that class of whom mortality is universally affirmed. So when it is asserted by these writers that whatever shows marks of design must have had an intelligent author; and that the world shows marks of design, they virtually assert that the world had an intelligent author. But this is assuming that to be true, which the atheists deny, and which, in fact, is the very proposition that they themselves pretend to be establishing. In short the attempt to ascertain in this way the being of a God, is merely a tautological play of words; inasmuch as his being must be proved, before the premises can be laid down.

Some have affirmed that without revelation the idea of God would never have been possessed by man, and that his possession of it proves revelation to be true. But the universal, ever-existing belief in Him, is strong presumptive evidence against such a conclusion. It appears to me that the idea necessarily springs from the activity of the faculties. We observe, for instance, the construction of the human heart, and its contractions. We observe the blood coursing from the heart through the arteries to the circumference of the body, and returning through the veins; and in the veins we perceive valves. Now, Causality instinctively recognizes efficiency in the arteries and veins to convey the blood, efregard—that submitting of their will to that of their parents—which we witness as the result of the former combination.

Veneration is conspicuous in the heads of those who have great reverence for whatever is ancient and venerable, and who continually talk about 'the wisdom of their ancestors.' You in this country seem to have little respect for the wis-

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ficiency in the valves to prevent its regurgitation, and efficiency in the contraction of the heart to occasion its propulsion. But it goes farther, and, in virtue of its very constitution, infers that of the tubes, the valves and the heart, themselves, there must have been an *efficient antecedent*, and that this antecedent, to be efficient, must have been intelligent. Then we have a faculty including, as the evidence proves, in the sphere of its activity, love of the supernatural, and another giving the tendency to adore; these would greatly aid in fixing on this antecedent the attention of intellect.

Of this efficient, intelligent antecedent of themselves, men would necessarily form very different conceptions according to the development and enlightenment of their intellectual and moral powers. Some would indeed, represent him as fickle, vain, proud, partial, revengeful, bloodthirsty, little better, in fact, than an almighty demon. Yet I think it it might be shown that the idea of God, as revealed to us by Christ, is such as would be ultimately formed by men of capacious, well-balanced, active and highly enlightened intellectual, and moral faculties. This, however, militates not against either the utility or necessity of revelation, for, to use the words of Bishop Butler, "Though natural religion is the foundation and principal part of Christianity, it is not in any sense the whole of it."

But if the belief in the being of a God springs from the activity of the human faculties; how is it, it may be asked, that some deny His existence? The solution must be looked for in idiosyncracy of organization. There are men who cannot perceive colours, others who cannot perceive melody, others who cannot perceive the dependence of an effect on a cause, others who feel not the impulses of Conscience or Benevolence; there are idiots, imbeciles or maniacs; but these form the exceptions to be accounted for, not the instances to be brought into the proof of any general proposition.

If these views be correct, the endeavour to prove the existence of the Deity is not very different from an attempt to prove the existence of melody. Not more than one in ten thousand would need any proof, and on the understanding of the ten thousandth the argument itself dom of your ancestors; perhaps there is no country in which this direction of the feeling is less prevalent. Servants in whom this organ is large are the most obedient and deferential.

This faculty inspires the beholder with profound awe when gazing on ancient temples, cathedrals or sepulchres. A person in whom it is small would experience little emotion even while gazing on Westminster Abbey, with all its monuments of departed genius. Veneration is one ingredient in the tendency to antiquarianism.

You have doubtless heard that phrenology is hostile to Religion. This has often amused me when I think that it is the first system of mental philosophy which has recognised an innate faculty giving a tendency to adore. But we must distinguish between Religion and Creeds. The latter are merely standards of belief formed by men as fallible as ourselves, from their own interpretations of Scripture. The Scotch Confession of Faith, for example, contains the established creed of the National Church. Now the articles of this creed were adopted by a majority of votes: thus they determined, by two or three of a majority, perhaps, what was and what was not the will of God. The sentiment of

would fall like idle and incomprehensible sounds. Though I would not, therefore, engage in such an argument, I would, in the training of youth, continually refer to the power, wisdom and goodness of the Creator, as manifested in his works, from the grass on which we tread, to the vast and glorious orbs which roll through immeasurable space. I would do this, not for the purpose of proving His existence, but as the best means of cultivating the faculties in harmony with the religious sentiment, around which all truth should be gathered. Especially would I point out in human and external nature, evidences of the moral government of God, of the invariableness of His laws, and of the sanctions by which He enforces their observance. For the laws of nature are no less divine than those of revelation, and the PRIMAL TRUTH, taught not only by the Divine teacher, but by Nature, with her thousand voices, is, that however THE WILL OF THE FATHER may be manifested, to conform to it is man's highest duty, his most effectual means of moral advancement, of present and ultimate happiness.

Veneration gives us a tendency to love God and submit ourselves to His will: but it does not direct us to any particular creed, and we have as much right to follow the dictates of our own understandings in interpreting Scripture, as the Divines of Westminster had who formed the Scotch confession of Faith, or any other Divines ancient or modern. To say that phrenology is hostile to Religion, however, is as absurd as to affirm that the discoveries of Newton put out the light of the sun.

This organ is larger in women than in men—and they are more obedient and more prone to devotion. In misfortune, too, they submit with a better grace. When large in a preacher, it is manifested in prayer by the soft breathing fervour of his tones; when small, his prayers are cold and formal.

Some seem to tremble for the stability of Religion; but as Nature has implanted the organs of Veneration and Wonder in the brain, and the corresponding sentiments in the mind, it is a groundless terror to apprehend that Religion can ever be extinguished, or even endangered, by the arguments or ridicule of the profane. Forms of worship may change, and particular religious tenets may now be fashionable and subsequently fall into decay, but while the human heart continues to beat, awe and veneration for the Divine Being will animate the soul; not until the race of man becomes extinct, will the worshipper cease to kneel and the hymn of adoration to rise.

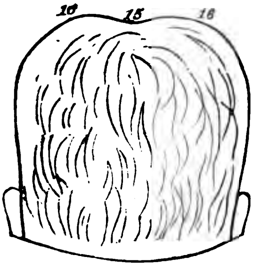
Sometimes this organ becomes diseased, and is then occasionally the source of the most beatific emotions. In Mr. Drury's establishment near Glasgow, I saw, in 1836, a patient whose tendency to prayer, when labouring under a fit of insanity, was irresistible. In his head I found Veneration small: yet he was on his knees all day. This was thought to be an opposing fact; but this patient had a lucid interval, when I conversed with and asked him whether he enjoyed his devotional exercises when excited.

"No," said he, "I do not; I feel very unhappy—and I pray that I may not be visited by Divine wrath." Cautiousness and Destructiveness were very large in him; and my belief is that he felt overpowering terror, and that in his prayers he was deprecating punishment. Mr. Drury himself became satisfied that this was the true explanation.

The natural language of Veneration is to carry the head and hands upward.*

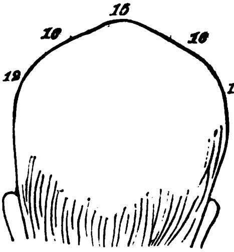
15. FIRMNESS.

1. Mrs. H.



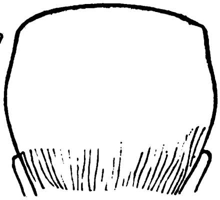
Firmness small, Conscientiousness large.

2. David Haggart.



Firmness large, Conscientiousness small.

3. John Gibson.



Firmness and Conscientiousness small.

This organ is situated at the posterior part of the coronal region, close upon the middle line. You can readily distinguish the middle of Cautiousness: this organ lies directly upwards from it. I shall exhibit specimens of this organ in very different degrees of development. In this head of Mrs. H. Conscientiousness is large and firmness very deficient. In Haggart you see Conscientiousness very deficient and Firmness very large. In the Rev. Mr. Martin both organs are much developed; and you perceive that this part of the coronal region constitutes a large and full arch.

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* I knew a sailor, in whom both Benevolence and Veneration were very large; who, when intoxicated, was particularly kind and generous in his manners, and who would kneel down and pray aloud, in the most fervent though unconnected manner

Contrast these two heads. In Captain Parry the head gradually rises from before backward. In Dr. Dodd, in whom both these organs are very deficient, the head is higher in front than behind. In Oberlin, Firmness is very large. This is an extraordinary head; and his history exhibits a most delightful example of undaunted perseverance in a course of high and practical benevolence. This organ is always large in stubborn and refractory children. He who is deficient in it is the sport of external circumstances and communicated impressions. When large, it gives fortitude, constancy, perseverance, determination; and, when too energetic, produces obstinacy, stubbornness, infatuation.

Firmness has no relation to external objects; it only adds a quality to the manifestations of other organs. Thus with Combativeness it produces determined bravery—with Conscientiousness inflexible integrity. Firmness, however, cannot supply the deficiency of other organs. One with very small Tune might persevere in striking the keys of a piano seven years without making melody. We must distinguish between the manifestation of Firmness and the gratification of the large organs. An individual in whom Acquisitiveness is large may persevere unceasingly in the pursuit of wealth, but in the means employed he will be vacillating and unsteady. This organ is larger in the British than in the French, and the latter are astonished at the stubborn perseverance of the former. Napoleon complained of the weakness of the French character in this respect. Under the influence of large Combativeness and small Cautiousness, they make the most cheering and vigourous attacks; but, if steadily resisted, their ardour abates and they give way. The British, on the contrary, advance with cool determination, and, although repulsed, are not discomfited, but preserve presence of mind to execute whatever may appear most advisable. This quality is of great service in contention, as he who is able to maintain his faculties in a state of vigourous application for the greatest length of time wearies out his opponent. Firmness is large, as you see, in King Robert Bruce; and he was distinguished for unshaken firmness in circumstances in which hope must have been very nearly extinct. His army was sometimes reduced to twenty men; but still he pursued his course with unwavering confidence.

Firmness when prominent, gives an extremely firm upright gait, as though an iron rod went from it through the spine; it imparts a peculiar hardness to the manner, and a forcible, emphatic tone to the voice. Those in whom it and Self-Esteem are large, and Veneration small, find it difficult to bow—they are 'stiff-necked.' Those in whom Love of Approbation and Veneration are large, and Firmness small, are ever bowing—they seem to find it difficult to keep straight.

16. CONSCIENTIOUSNESS.

The skull which I hold in my hand represents the marking of the head in 1806. In it there is no organ of Conscientiousness; the space now occupied by it, being left blank. This organ, in fact, was not discovered by Gall, but by Spurzheim. It is situated on the posterior and lateral parts of the coronal region, upward from Cautiousness and backward from Hope. *(See the three last figures.)*

Metaphysicians have disputed whether a sense of moral obligation is a natural instinct: Hobbes ascribes it to Self-Love; Mandeville, the author of the celebrated 'Fable of the Bees,' to Love of Praise: "The moral virtues," said he, "are the political offspring which flattery begot upon pride." Dr. Clarke ascribed it to perception of Fitness of Things: he is supposed to have been the object of Fielding's satire in the character of 'Square,' Hume ascribed this sentiment to a perception of Utility—thus placing man on a level with a chest of drawers; Paley to Hope of Eternal Reward; Cudworth, Hutcheson, Stewart, Brown and Reid insisted on a moral sense; McIntosh denied it, and

Adam Smith ascribed the sentiment of justice to sympathy between the approver and the action and object approved. Phrenology, by fixing this single point, has conferred a great boon upon moral science. It proves that a faculty exists which produces the feeling of duty or of obligation, independently of fear of punishment, hope of reward, or any other extrinsic motive, This sense of moral obligation must not be confounded with Justice, for Justice is one of its results. Justice is a compound idea, or conclusion resulting from the operation of the intellect upon human actions. The latter investigates the motives and consequences of actions. But there it stops no feeling of duty or obliation is the result. But as soon as the intellect has thoroughly examined a subject and penetrated into the springs from which it proceeds, a feeling of decided approval or condemnation arises spontaneously in the mind. Suppose you were sitting on a jury: when you hear the evidence, a feeling arises in the mind that this is right or that is wrong. The intellect sifts testimony and draws inferences. Conscientiousness decides upon the right. I know this to be true, because I have been acquainted with men of great intellectual talents, who, after hearing testimony, could not tell where justice lay.

This faculty controls and regulates all the others. If Combativeness and Destructiveness be too active, Conscientiousness prescribes a limit to their indulgence; it permits defence, but no malicious aggression. If Acquisitiveness urge too keenly, it reminds us of the rights of others. If Benevolence tends toward profusion, it issues the admonition Be Just before Generous. If Ideality aspires to its high delights when duty requires laborious exertions in another sphere, Conscientiousness supplies the curb, and bids the soaring spirit stoop its wing. It brings all the faculties to the standard of duty, and gives an earnestness of manner—a directness of purpose—a prompt fulfilment of obligations—which constitute that daily beauty in the life which renders the individual in the highest degree useful and respectable. If Benevolence be deficient, however, duty is not only rigidly performed but rigidly exacted. There is little or no consideration for the errors or follies of men; justice is not tempered with mercy.

An individual in whom this faculty is weak, generally acts and judges of others according to the predominant feeling of the time. He is amiable, stern, harsh, courteous, or repulsive, according as Benevolence, Destructiveness, Love of Approbation, or Self-Esteem, bears rule. Such men are never to be relied on. As judges they are unsound, as friends unreasonable, as sellers apt to misrepresent and extort, as buyers to depreciate and evade payment.

So far from the Laws of Honour, as they are called, being prompted by Conscientiousness, they can only exist where it is weak. They are the offspring of Love of Approbation and Self-Esteem. The conscientious man, if conscious of being right, will remain inflexible; but if aware that he is wrong, so far from deeming it a degradation to acknowledge his fault, he rises in his own esteem by doing so. But when Conscientiousness is weak, Self-Esteem refuses to admit its fallibility, Love of Approbation feels as though the world's esteem would be lost by such an acknowledgement, and the wretched victim, rather than own that to be wrong which is utterly indefensible, will go to the field and die.

To those in whom this faculty is small, no feeling is more incomprehensible. According to Madame de Staël, Napoleon was never so completely at fault, as when he met with opposition from a man who acted under the influence of pure integrity. To obtain the aid of such a person, he offered him money—no, that would not do. He offered him title—no, that would not decide him. He then asked him what he did want. The man said he wanted nothing, but that he could not consent to do what he considered wrong. Napoleon could not understand this and considered him essentially mad without knowing it. It is a favourite maxim with some that "Every man has his price"—a maxim which those in whom Acquisitiveness or Love of Approbation is large and Conscientiousness small consider as profoundly discriminative; but there are minds whose deviation from rectitude no price can purchase, no honours procure.

Veneration, Conscientiousness and Benevolence may exist independently. Their union forms the religion of the Bible, as expressed in the command to do justice, love mercy and walk humbly with God. Those in whom this combination exists in predominant activity, are, to use the language of St. Paul, 'a law unto themselves.' Those in whom it is deficient are totally unfit to be so. This shows the absolute necessity of written laws by which to direct their conduct.

In disease, this organ produce excessive remorse. A clergyman believed himself the cause of all the bloodshed in the wars of the French Revolution; and a man, who owed nothing, believed that he was indebted to every body, and deserved to be devoured by rats.

This faculty and Benevolence produce *gratitude*. It is a mistake to suppose that great criminals necessarily feel remorse. I talked to Hare when in prison; and, notwithstanding his atrocious deeds, he did not feel remorse in the slightest degree. Bellingham did not feel remorse, nor was the woman Gottfried troubled till disturbed by the law. In Haggart, Benevolence was rather large, and he felt great regret for having murdered the jailer at Dumfries; but, Conscientiousness being small, he felt no remorse on account of the thefts which he had committed. This organ communicates a pleasing simplicity to the manners, and gives an uprightness to the gait.*

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* Conscience is said to be a treacherous monitor, inasmuch as before the commission of crime, it warns us only in the gentlest whispers, but afterwards raises its accusing voice like thunder. This is easily and beau-

tifully explained by the phrenological doctrine, that the organs of the different faculties, are not always in an equally active state, but come into activity *seriatim*, either from internal causes, or as they may be affected by external circumstances. The doctrine is, that previously to the commission of crime, the propensities leading to that crime, are in a highly active state; but no sooner are these gratified, than a reaction takes place; the propensities, wearied with long exertion, become dormant, and the moral powers coming into activity, show us the enormity we have been guilty of, in all its horrors *Ed. Phren. Journal*

LECTURE VIII.

17. HOPE.

THIS organ is situated on each side of that of Veneration, and before that of Conscientiousness. Dr. Gall did not discover it, but left the region which it occupies blank and marked with a note of interrogation. Indeed, he considered Hope as a mode of activity of every primitive faculty; in this he confounded Hope with Desire. The criminal on the scaffold may have an earnest desire to live, when hope has utterly fled.

Hope gives the tendency to believe in the future attainment of what the other faculties desire. Thus a person with Hope large, joined to large Love of Approbation, will expect to rise to distinction—to large Acquisitiveness, will expect to become rich. Hope is a powerful alleviator of affliction and a copious source of enjoyment. It inspires with gay, fascinating emotions; and paints the future in hues of enchanting brilliancy. If Cautiousness be small, and Hope large, the individual is gay, careless, happy for the passing day, and regardless of the future—or rather, Hope supplies his future with every desirable thing without suggesting to him the toil and difficulty of attainment. If the contrary combination exist, then is the future hung with clouds and darkness; the present is not enjoyed, on account of the evils which Cautiousness anticipates, but which probably never arrive.

In mercantile men, Hope joined to deficient Cautiousness leads to rash speculations. With such a combination, they see nothing in its true light. Advantages are magnified and difficulties are unperceived. If Consciousness be deficient, such men are generally *great promisers.* They will engage to do any thing required of them, some three or four months hence; and when the three or four months are gone by, and their promises are unredeemed, they are as ready as ever to promise again, thus they will go on promising positively to all eternity, if you will only allow them three or four months for their promises to run. I would recommend men in business, who may have to deal with persons of this class, always to judge for themselves as to the probability of their keeping their word, and act accordingly. The combination of large Acquisitiveness with large Hope and deficient Cautiousness leads to gaming; on the other hand, if Acquisitiveness be large, joined with large Cautiousness, the motto is 'A bird in the hand is worth two in a bush,' and *saving* is resorted to.

Hope, in religious matters, is an essential element of faith, and tends to lessen or remove that 'Fear of Death' which is to many minds so intensely painful. Some persons under its influence seem incapable of realizing the approach of dissolution, and actually die by inches, persuading themselves all the while that they are in a fair way to recover, till death has extinguished the last ember of the feeling.

An argument of no small weight and beauty has been drawn, from the existence of this feeling in the human mind, in favor of a future life. It seems to have direct reference to a future state, and naturally leads the mind to anticipations which the present world can never realize—to spring forward to something far removed in the deep recesses of time. We find that every other feeling has its objects to which its full energies can be directed: Philoprogenitiveness exists, and we have children on whom to lavish its endearments; Adhesiveness, and friends surround us on every side. Is Hope the exception to the rule? Is there not a future world, to which its bright anticipations, so far beyond the realities of the present, bear the same relation, and where the 'longing after immortality' will be realized? Pope has seized this idea, and thus expresses it:

> "Lo! the poor Indian, whose untutored mind
> Sees God in clouds, or hears him in the wind—
> His soul, proud science never taught to stray,
> Far as the Solar walk or Milky Way:
> Yet simple Nature to his *Hope* has given,
> Behind the cloud-capt hills, an humbler heaven;
> Some safer world, in depth of woods embraced;
> Some happier island, in the watery waste,
> Where slaves once more their native land behold,
> No fiends torment, no Christians thirst for gold."

The idea is that as this faculty exists and relates to futurity, the futurity exists to which it is related.

In the head of Rammohun Roy, Hope and Veneration are deficient, as you see by this cast, which was taken from Nature; but my opinion is that, though true in other respects, it represents the head as too long. This may have been occasioned by the joining together of the mould: each half may have been one-fourth of an inch or so too long, making half an inch difference altogether. At any rate, I have never seen so long a head. The form of it, however, is perfectly correct. The cast was given to me by a gentleman who saw it taken. In Mr. Martin's head, Hope is well developed. In this head of a criminal, it is decidedly small.

18. WONDER.

This organ is situated in front of Hope, at the side of Imitation, and immediately above Ideality.

Dr. Gall observed some persons prone to extravagant notions, who pretended to see and hold conversations with the dead or absent. Are they, said he, fools or imposters, or does this depend on cerebral organization? He studied the history of those most remarkable for this quality, as Socrates, Tasso, Swedenborg, and others; examined and compared their heads, and found a prominence between Ideality and Imitation. Pursuing this hint, he examined the heads of the credulous whenever they fell in his way; and found the disposition invariably associated with this development. It is the foundation of curiosity, and when large, produces credulity, a tendency to be astonished and to believe in proportion to the improbability of a narrative; it leads to belief in ghosts and witchcraft, and was the foundation of the Scottish superstition called *second sight.**

My own observations in regard to it have been to this effect: Those in whom I have seen it large have had great love of news—the wonderful always delighted them; the novels of the Arabian Nights, the unexpected incidents of the Waverly novels, were to them a source of extreme pleasure. There was a look of wonder about the countenance: the exterior angle of the eye was drawn upward. Those in whom I found this organ deficient had no such taste; their delight was to strip every narration of the wonderful, and reduce it to what they would call plain common sense.

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* I am acquainted with a gentleman of great erudition, formerly a Senator of New York, and now holding a judicial station, who firmly believes that he possesses this extraordinary gift, and that he has held communication with spirits. In him wonder is largely developed.

Soon after Santa Anna entered Texas, this gentleman announced to a friend, that the Texans had defeated the Mexicans, and that Santa Anna was killed. When asked how he knew, he replied that he had seen what he stated. News soon came that about that time the Texans did obtain a victory over the Mexicans, that Santa Anna was taken prisoner, and had been in great danger of being put to death, a confirmation sufficiently near to render the previous assertion remarkable.

It appears to me that the above case may be thus explained. The gentleman knew that the Texans had asserted their independence, that a Mexican army had entered Texas for the purpose of reducing them to obedience and punishing them for revolt, that a battle must take place. His large intellectual faculties enabled him to appreciate the comparative firmness, enterprise and daring of the combatants, and to arrive at the conclusion that, notwithstanding disparity of numbers, the Texans would be victorious. Sympathy with his countrymen would probably aid in the formation of this conclusion. So far there is merely an ordinary exertion of the intellectual powers, but instead of the result presenting itself in the customary form, predominating Wonder, caused the intellect to so vary its usual mode of procedure that, for its gratification, the perceptive faculties *secreted*, as it were, the results to which the reflective faculties had arrived, and fashioned them into a scene or vision. It appears to me that this explanation may be applyed to all the so called cases of second sight.

I am disposed to consider the primary function of this organ to be the *Love of the New.* Change is the character of the world. Wonder is given to put us in harmony with the perpetual succession of new objects which supply the place of the old. Destructiveness put us in harmony with decay, Wonder with renovation. Mr. Bryant, I find, has noticed the harmonious and benevolent operation of these two processes:

> "My heart is awed within me, when I think
> Of the great miracle that still goes on
> In silence round me—the perpetual work
> Of thy creation, finished, yet renewed
> For ever. Written on thy works, I read
> The lesson of thy own eternity.
> Lo! all grow old and die! But see again,
> How on the faltering footsteps of decay
> Youth presses—ever gay and beautiful youth,
> In all its beautiful forms. These lofty trees
> Wave not less proudly that their ancestors
> Moulder beneath them!"

If this organ be, as I believe, the Love of the New, then its activity is probably an element in the interest we take in changes of fashion. To many novelty is always pleasing; a new fashion is admired and thought beautiful; an old one seems unsightly. The dress and furniture of the early part of the reign of George II. excites our surprise; we wonder how people could ever admire them, yet they were admired when new. Of course, there are forms and fashions which are intrinsically beautiful; beauty which never palls, objects over which fashion exercises no control. A Chinese tea-pot may be rendered agreeable by fashion, but will look ugly when the mode changes; but the exquisite vases dug from Herculaneum, are as much admired now as ever, they please in all countries and all ages.

This faculty stimulates to the love of adventure. Sir John Ross observed it to be strongly developed in boys who ran away from home to follow the sea. Some imagine that a voyage, with its hardships and dangers, will soon cure the lads of their fancy; but in this they are not seldom disappointed; the very dangers have a charm in them to a mind thus constituted.

The faculty of Wonder aids Genius, by prompting it to originality; in Scott, it was much more strongly developed than Ideality; and the tendency of his mind corresponded with the development. This leads me to notice the head of Sir Walter which is sold in this country. It is a palpable forgery. The face is very like, and the general form correct; but the dimensions are greatly exaggerated, as if to excite the organ of which we now speak. I have seen Scott a thousand times, and have a perfectly exact bust of his head, modelled by Mr. MacDonald; I therefore know what I say to be correct.

In its higher degrees of development, Wonder becomes a passion for the marvellous. I know a very intelligent gentleman of Edinburgh, in whose head this organ is very large; who remarked to me that he had often for his part wondered at people requiring evidence to enable them to believe. In his own mind the strongest intuitive tendency was toward belief, no matter how strange the thing to be believed. Wonder should be very strongly manifested in the heads of those persons who embrace readily all that is mysterious in Animal Magnetism.

This is a representation of the head of Tasso, who believed that he held converse with spirits; in him Wonder and Ideality are both very large. This is the head of Baron Swedenborg, who believed himself called to reveal the most hidden mysteries concerning the spiritual world. "In

Tasso.

1743," said he, "it pleased the Lord to manifest himself to me, and to appear before me, to give me a knowledge of the spiritual world, and to place me in communication with angels and spirits; and this power has been continued with me till the present day." "Swedenborg," say his biographers, "was a man of unquestionable sincerity, but one of the most extravagant enthusiasts that ever lived." I have seen a number of Swedenborg's followers, and this region is much developed in all of them. I must add that I have found them to be a moral and very amiable class of men.

Mr. N——, of whom I have before spoken, was troubled with apparitions during the latter part of his life. These gave him amusement at first, as he was fully aware of their unreal nature. He would see a long train of Greeks, then of Turks, then of his own countrymen pass before his eyes, each in appropriate costume. At last one vision became so terribly real that he never afterward spoke of these visitations. He saw his wife, who had been dead some years, standing in the room; and so life-like was the appearance that he spoke to her. She walked toward the window: he followed her; it was not till his head and hands crashed against the glass that he became convinced of the illusion. After death, the appearance of the dura mater and skull over this organ indicated that chronic inflammation had existed.

Sir Walter Scott remarks that "no man ever succeeded in imposing himself upon the public as a supernatural personage, who was not to a certain extent the dupe of his own imposture."

There is a great difference of development in this region among different nations. In the ancient Greek skulls it is large; in the Peruvian skulls it is extremely large—and they were exceedingly credulous, taking the Spaniards for supernatural beings; in the New Hollanders, on the contrary, the organ is very small. Captain Cook remarks that when his ship went near the shore, some natives were walking along; and, though the sight of a ship under sail must have been as strange a sight to them, as a conveyance from the moon would be to us, they hardly stopped an instant, but just glanced toward it and trudged on.

The manifestations of this sentiment are finely delineated by Akenside in his 'Pleasures of the Imagination:'

"Witness the sprightly joy, when aught unknown
Strikes the quick sense, and wakes each active power
To brisker measures. Witness the neglect
Of all familiar prospects, though beheld
With transports once; the fond, attentive gaze
Of young astonishment; the sober zeal
Of age, commenting on prodigious things:
For such the bounteous providence of heaven,
In every breast implanting the desire
Of objects new and strange, to urge us on

With unremitted labour to pursue
Those sacred stores that wait the ripening soul
In truth's exhaustless bosom. What need of words
To paint its power? For this the daring youth
Breaks from his weeping mother's anxious arms,
In foreign climes to rove; the pensive sage,
Heedless of sleep, or midnight's harmful lamp,
Hangs oe'r the sickly taper; and, untired,
The virgin follows, with enchanted step,
The mazes of some wild and wondrous tale,
From morn to eve. Hence, finally, by night,
The village matron, round the blazing hearth,
Suspends the infant audience with her tales,
Breathing astonishment! of witching rhymes
And evil spirits; of the death-bed call
Of him who robbed the widow and devoured
The orphan's portion; of unquiet souls
Risen from the grave to ease the heavy guilt
Of deeds in life concealed; of shapes that walk
At dead of night, and clank their chains, and wave
The torch of hell around the murderer's bed!
At every solemn pause, the crowd recoil,
Gazing each other speechless, and congealed
With shivering sighs—till, eager for th' event,
Around the beldame all erect they hang,
Each trembling heart with grateful terrors quelled."

The natural language of this organ is to turn up the hands and eyes with a peculiar expression of astonishment, and to nod the head obliquely upward in the direction of this organ.

19. Ideality.

This organ is situated nearly along the temporal ridge of the frontal bone, lying backward and a little upward from Causality. It is important to bear the situation in mind, as this organ has been mistaken for Acquisitiveness. The upper part of the side of the head in Hare was very large. Sir W. Hamilton and Stone noticed this, and manifested great glee at having discovered that so notorious a villain and murderer should have Ideality large. Being present I saw that they had mistaken the situation of the organ. It is worthy of remark that anti-phrenologists generally take little trouble to be correct; they seem to think that the more blunders they commit, the worse it is for phrenology. When these gentlemen had done, I requested Professor Wilson, who was also present, to sit down beside Hare. I then drew a line from Causality to Cautiousness, on the Professor's head, and asked them what they saw there. They said they saw a wide and large part of the head above this line towards the front. I then drew a similar line on the head of Hare, and asked them what they saw above it. They said they saw nothing at all. Ideality being in him really very deficient. The line reached almost to the top of the head, the coronal region was so very shallow.

This rule being important, I shall spend one monent more in its further illustration. Here are two heads of very distinguished men. I place a black string around each. You see how much Canova has the advantage over Napoleon in this region. Again, see how large in Chalmers, who has a splendid imagination—in Wordsworth, the poet—in Joseph, the sculptor—in Haydon, the historical painter—in Sir David Wilkie, whose head in other respects is very great—and in Voltaire—compared with its development in Franklin, the Rev. Mr. Martin, or Joseph Hume, M. P.

Dr. Gall observed in a friend who had a reputation for extempore verses, that his forehead above the nose rose perpendicularly, and then retreated, extending itself laterally in such way as to give the impression of a piece having been added on each side. He noticed the same developments in the busts of Homer, Ovid, and others. Being invited by M. Nicholai to see a collection of thirty poets of different ages and countries, he found this part large in all, though they were in other respects very different, and he called it the organ of Poetry; but Spurzheim saw that Poetry is the result of various organs, and is in fact very different in kind; this organ gives to Poetry or Prose, a certain quality of beauty, elegance, perfection or sublimity. He therefore called it Ideality. The various perceptions of the intellect imbued with this sentiment, and expressed in words, become Poetry—if expressed on canvass, Painting—if in marble, Sculpture. Constructiveness would be content to fashion and configurate—Ideality wishes for exquisiteness, beauty, finish, taste.

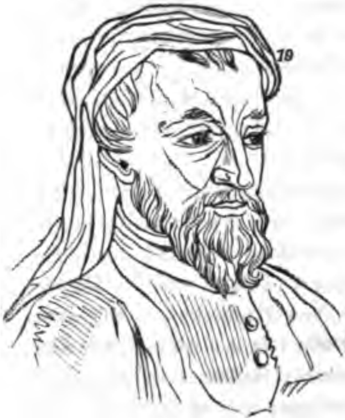
There are persons very deficient in this organ, who declaim, as matter of religious principle, against the objects of its gratification. But this is not the language of universal human nature, nor of physical nature either. Where Ideality exists to a considerable extent, there is an innate desire for the beautiful, and an instinctive love and admiration of it. The arrangements of the Creator in the material world are so far from being in opposition to it, that objects calculated in the highest degree to excite and gratify the feeling, are every where scattered in the most profuse abundance. What are the flowers that deck the fields, combining perfect elegance of form with the most exquisite loveliness, delicacy, and harmony of tint, but objects addressed purely to Ideality, and the subordinate faculties of Colouring and Form? They enjoy not their beauty themselves, and afford neither food, raiment, nor protection to the corporeal frame of man; and on this account some persons have been led to view them as merely Nature's vanities and shows, possessed of neither dignity nor utility. But the individual in whom Ideality is large, will in rapture say, that these objects and the lofty mountain, the deep glen, the roaring cataract, and all the varied loveliness of hill and dale, fountain and fresh shade, afford to him the banquet of the mind; that they pour into his soul a stream of pleasure so intense, and yet so pure and elevated, that, in comparison with it, all the gratifications of sense and animal propensity sink into insipidity and insignificance. In short, to the phrenologist, the existence of this faculty in the mind, and of external objects fitted to gratify it, is one among numberless instances of the boundless beneficence of the Creator toward man; for it is a faculty purely of enjoyment —one whose sole use is to refine, and exalt, and extend the range of our other powers, to confer on us higher susceptibilities of improvement, and a keener relish for all that is great and glorious in the universe.

We find great differences in the development of this faculty in various nations. The ancient Greeks possessed it large, you see how much this skull extends to the sides; this is another; this another. Compare any of these with this Esquimaux skull, or with this of a New-Hollander, or this of a Charib. How great the difference! It is a remarkable fact that Ideality is almost invariably deficient in atrocious criminals. This is the head of one; this of another. We have more than a hundred, in all of which the deficiency exists, with one or two exceptions in favour of French criminals.

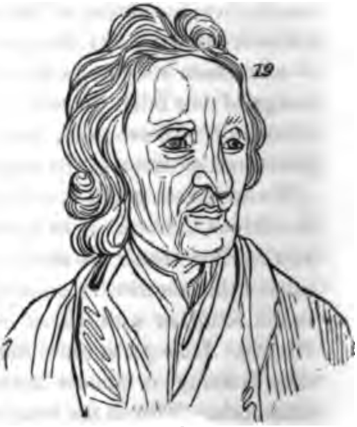
I have stated this to be the organ which produces refinement of feeling, in my own country I have noticed that persons of low birth, whose talents and industry have raised them to wealth, are susceptible of refinement in their manners, habits, and sentiments, in proportion to the development of this organ and that of Love of Approbation. When small, their primitive condition is apt to stick to them through life; when large, they make rapid advances, and improve by every opportunity of intercourse with their superiors.

This sentiment gives to the conversation, in animated discourse, splendour, sprightliness and buoyancy. It gives taste in furniture and dress: an elegant vase, couch or chair, or the human form attired in dress in which grace, utility and beauty combine, are objects which we delight to see, and which we feel to be agreeable. The pleasure arising from it is natural, and of so excellent a quality, as to be approved by Intellect and all the moral powers.

As a fine contrast of development, take this drawing of



Chaucer.



Locke.

Chaucer, and this of Locke, or this of Cobbett who had no notion of any thing refined or beautiful in poetry or the arts, and ridiculed the manifestation of this sentiment.*

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* See his remarks on Shakspeare in "Advice to Young Men," paragraph 77., and the following remarks on Milton's "Paradise Lost."

"It has become of late years the fashion to extol potatoes, as it has been to admire the writings of Milton and Shakspeare. God, Almighty and All-foreseeing, first permitting his chief angel to be disposed to rebel against him; his permitting him to enlist whole squadrons of angels under his banners; his permitting the devils to bring cannon into this battle in the clouds; his permitting one devil or angel, I forget which, to be split down the middle from crown to crotch, as we split a pig; his permitting the two halves, intestines, and all, to go slap up together again and become a perfect body; his then permitting all the devil host to be tumbled headlong into a place called hell, of the local situation of which no man can have an idea; his causing gates (iron gates too,) to be erected to keep the devil in; his permitting him to get out nevertheless, and to come and destroy the peace and happiness of his new creation; his permitting his son to take a pair of compasses out of a drawer to trace the form of the earth; all this, and, indeed, the whole of Milton's poems is such barbarous trash, so outrageously offensive to reason and common sense, that one is naturally led to wonder how it can have been tolerated by a people amongst whom astronomy, navigation, and chemistry, are

Ideality is often abused, and then, as in the case of Rousseau, there is disgust for the realities of life. In society, it and Self-Esteem are generally large in the coteries who are called *exclusives*, who consider themselves to be pinks of perfection, and are so enamoured of themselves as to think hardly any to be fit company for them. To form a correct idea of the influence of this faculty, compare the prose of Locke with that of Bacon; the metaphysical writings of Reid with those of Brown; or the poetry of Swift with that of Milton.

19.a SUBLIMITY.

You find a part situated immediately behind Ideality marked in the bust with a note of interrogation. From its being sometimes small when Ideality is large, and large when Ideality is small, we conclude that it is the region of a distinct faculty; and some facts seem to show that it is the organ which gives the sense of the sublime, while Ideality gives the sense of the beautiful. There is much difficulty, however, in coming to a correct decision; for if we analyze the sublime, we find one of its elements to be terror, which would seem to be the result of Cautiousness. What we want is a decided instance in which Cautiousness and Ideality are small, and this region large. I know a physician in whom this part is large, while Cautiousness is small, and Ideality of medium size, who has an intense love of the grand and terrific. He could spend hours in gazing on a sea-storm, or listening to the roar of the thunder or the cataract. But, in his head, Wonder is large, and that organ may be supposed to aid in producing the feeling. What we still want

understood. But it is the fashion to turn up the eyes when "Paradise Lost" is mentioned; and if you fail herein, you want taste; you want judgment, even, if you do not admire this absurd and ridiculous stuff, when, if one of your relations were to write a letter in the same strain, you would send him to a mad house and take his estate."

is an instance of a large isolated organ, where no auxiliary influence exists.*

20. Wit.

This organ is situated on the side of Causality. When large it fills the lateral part of the superior portion of the forehead. Dr. Gall says that the best idea he can give of its function is to say, that it is the distinguishing faculty of Rabelais, Cervantes, Boileau, Racine, Swift, Sterne and Voltaire. When this development is excessively large, it is attended with a disposition, apparently irresistible, to view objects in a ludicrous light. Laughter may be produced without Wit. I have observed children in whom Acquisitiveness is large, burst into laughter on being suddenly presented with money: others who always laughed on an unexpected presentation of sweetmeats; others when suddenly praised; those in whom Destructiveness is large laugh on seeing another unexpectedly injured. A lady told me that she inevitably laughs when she sees mischief or misfortune, such as a broken leg or a fall in the mud overtake one. On the other hand, there may be much excellent Wit without exciting laughter. Laughter seems to result, in short, from a sudden gratification of many of the feelings: Wit, to consist in the perception of congruity amid incongruity.

You perceive this organ large in the head of Dr. Franklin, forming a striking contrast with its development in Joseph Hume. It is particularly large in the head of Sterne. It is large in the head of Haydon.

No faculty has puzzled the metaphysicians and phrenologists more than this. But all phrenologists agree that the development of this organ gives the sentiment of the ludicrous, and disposes to mirth. My opinion is that Wit consists of any form of intellectual conception imbued with the sentiment of which this is the organ.

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* A *great* beautiful thing, is a form of expression hardly ever used; but that of a great ugly thing is very common. There is a wide difference between admiration and love. The sublime which is the cause of the former, always dwells on great objects and terrible. Burke.

It has been a question among phrenologists whether there is any class of external objects related to this faculty, in the same manner as colours are related to the organ of Colour. Some maintain that there are. A gentleman said that he conceived a nose, a night-cap, a windmill, a sailor with a wooden leg, and the elbow, to be essentially ludicrous. This struck me as a very ludicrous idea. If a nose be too long or too short—if it be a red nose on a pale face, or a pale nose on a red face—it may be ludicrous; but this arises from incongruity, and is by no means essential to a nose. So a night-cap is not ludicrous *in* itself, but when Moore in his Two-penny Post-bag, makes Lord Chancellor Eldon, on being suddenly called to the King, enter with his wig thrown hastily over his red night-cap to maintain the becoming splendour of his office, we feel that such a scene would be ridiculous enough; but then this again arises from the incongruity. To me the ludicrous appears to be merely a mode of existence of which almost all objects are susceptible, but which is not characteristic of any. The nose, for instance, when symmetrical, and, in relation to the other features, harmonious in size and colouring, naturally excites the sentiment of the beautiful, and calls up feelings, not of the ludicrous, but of pleasure and admiration.

Those who have this region large, seem to see every thing in a ludicrous light, which deviates from the fit and appropriate. And thus, that a man should walk on a piece of wood instead of on a proper leg, appears to be ludicrous to some; but this can only be when the higher sentiments do not control. It seems to me that the office of this organ is to check the other faculties in a gentle way, and arrest their aberations.

Mr. Fuller, in the American Phrenological Journal, remarks that Wit may be defined to be the perception of the pertinent or appropriate, and that the ludicrous arises from the perception of incongruity or inadaptation. Thus, he says, when Philoprogenitiveness is manifested in attention to children, the pertinency of the exercise is pleasing to Wit; but when the same feeling is lavished upon cats, dogs, or monkeys, the ludicrous appears, and Wit laughs at it. He also remarks of Byron who had Wit, and Ideality large, that his Ideality would admire a beautiful foot, his Wit prompt him to ridicule a deformed one: hence his peculiar annoyance under his slight deformity.

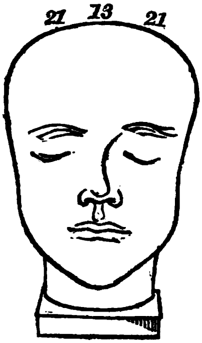
This organ, then, produces great amusement and entertainment, and is moreover a slight moral engine. Satire is a combination of Wit and Destructiveness, the latter being generally much the largest ingredient. Humour is the result of Secretiveness and Wit. We have in the face three muscles to draw the corners of the mouth up, or give the expression of laughter, and one to draw them down, or give the expression of weeping. Hence, some one has concluded that man was intended to laugh three times, at least, for crying once.

21. Imitation.

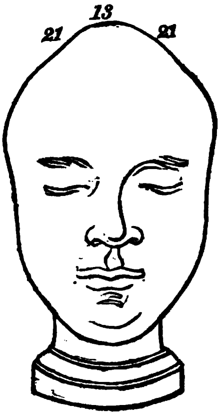
This organ is situated on the sides of Benevolence. It gives a squareness to the frontal part of the coronal region, constituting a sort of table-land. To ascertain its size correctly, mark the distance it rises above Causality. When small the head slopes suddenly down from Benevolence. To this head of Canova you see it gives great breadth. In this of François Cordonnier it is very large. In this of Voltaire it is still more strikingly developed, rising, indeed, higher than Benevolence. This is the head of Clara Fisher, taken when she was eight or nine years old, and much distinguished. In it you see the same conformation. In this head of Jacob Jarvis it is small.

Gall received the first intimation of this organ from the

Clara Fisher.



Jacob Jarvis.



head of a friend who had great imitative power. In him this part was greatly developed; on noticing which, Gall immediately repaired to the Institution for the Deaf and Dumb, to examine a boy admitted six weeks before, who had attracted notice by his amazing talent for mimicry. A little play was performed at the Institution, in which he so perfectly imitated the gestures, gait and looks of the director, inspector, physician, surgeon and some women of the establishment, that it was impossible to mistake them. He found this region as fully developed in this boy as in his friend. He multiplied observations and established the organ.

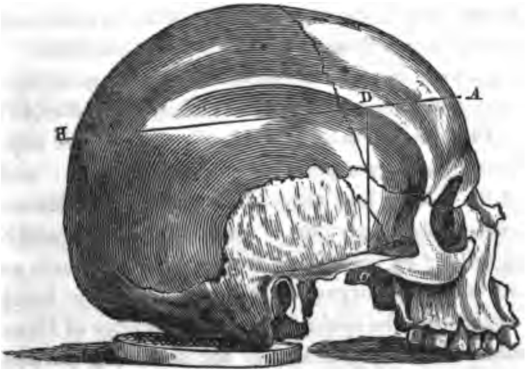
This organ contributes to render an author dramatic, and is large in busts of Scott and Shakspeare. It is the chief ingredient in the talent for acting, but in good acting much more is required. As it consists in reproducing existing appearances, it is greatly aided by powerful observing faculties. Charles Mathews possessed it large, with immense Individuality; and his mind was like an echo, his voice and features gave out with perfect ease whatever he heard or saw. Secretiveness is another great element in the finished actor, producing the ability to suppress the manifestation of the other faculties. That Imitation may be operative, however, the other faculties must have an adequate development. An actor deficient in Tune could not imitate Catalani, however great his Imitation; and one deficient in Self-Esteem and Destructiveness could not represent Coriolanus to perfection.

This faculty is essential to the portrait-painter, the engraver, the sculptor and the musician. It is requisite to the orator; giving him power to express his thoughts with appropriate gestures. In private life, some individuals accompany their speech with the most forcible and animated expressions of countenance; the nascent thought beams from the eye, and plays upon the features, before it is uttered in words. This is produced by much Imitation and Ideality.

In children this faculty is very active: hence the necessity of surrounding them with associates and setting them an example worthy of imitation. It assists the linguist in acquiring the spirit of a language.

LECTURE IX.

INTELLECTUAL FACULTIES.



REGIONS.—*All above the line* A. B. *constitutes the region of the Moral Sentiments. All below* A. B. *and behind* C. D. *constitutes the region of the Propensities. All below* A. B. *and before* C. D. *constitutes the Intellectual faculties. The mode of drawing these lines are described in the text.*

THE Intellectual faculties may be divided into three genera: 1. External Senses; 2. Observing Faculties; 3. Reflective Faculties.

The Observing Faculties occupy the lower, the Reflective Faculties the higher, portions of the forehead. The organs of these faculties are small, but active. On account of their size, many state their belief that it is impossible to observe them. These persons seem to forget the difference between difficulty and impossibility. It is sometimes difficult to distinguish between gneiss and granite; but no one thinks it impossible. The links round the main-spring of a watch are so minute that many hundreds might be but on one of these organs, yet artizans not only distinguish but make them. From such examples the fallacy of this objection may be plainly seen. There seems an obvious reason why the Intellectual Organs should be comparatively small. —When an organ is under excitement there is a rush of blood into it. Now the great excitement of the large organs constitutes passion, and if the Intellectual Organs had been equally large, Intellectual Passions would probably have been the consequence, instead of the calm, equable and cool observation and reflection of our present condition.

To ascertain the size of the Intellectual Organs is a matter of great importance. Attend closely, therefore, to these facts: The anterior lobe of the brain rests on the super-orbital plate, and terminates at its posterior edge; and that part of the frontal lobe appertaining to the Intellectual Organs rises to the upper part of Causality. The breadth may be ascertained by measuring from Constructiveness on one side, to the same organ on the other; and the height by measuring from the eyebrow to the upper edge of Causality. To obtain the length, attend to the following particulars: A line drawn from the meeting of the frontal, parietal and sphenoidal bones on one side to their meeting on the other, will run along the posterior part of the anterior lobe. When you have the skull before you, nothing can be more easy than to determine the length of the Intellectual Organs. In the living head it is not much more difficult. Place the head in its natural position, the axis of the eye being parallel to the horizon. Then observe the most projecting part of the zygomatic arch and from that part raise a perpendicular line passing upwards along the side of the head. All before that perpendicular is the seat of intellect. I do not know the physiological explanation of the fact, but I have verified it in a great number of instances.*

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* I have verified this observation by an examination of near fifty skulls, and have observed in addition that the most projecting part of the zygo-

Observe this Peruvian skull in front, and you may think it a good intellectual head; but apply to it the rule I have just given, and you observe how small is the anterior lobe, compared with that of this ancient Greek. Looking at this cast of the head of Napoleon, in front nothing very remarkable appears; but apply the rule, and you will find him to have a most extraordinary intellectual development. With the exception of Canova's, I know of no anterior lobe which approaches it in length.*—In observing the forehead, mark whether the inferior or superior portions are most developed; the one gives power of observation, the other of reflection. The difficulties attending the frontal sinus have been before explained. (*See page* 133.)

22. INDIVIDUALITY.

This organ is situated at the middle of the lower part of the forehead, immediately above the top of the nose. When large, it produces breadth, projection and descent between the eyebrows; when small, the eye-brows approach closely and lie in a horizontal line. This organ is very large, as you may see in Dr. Spurzheim. It gives the conception of being or existence, and knows objects in their individual capacities; I have seen Dr. Spurzheim so absorbed in the contemplation of a cast as a mere existence, that he would name it, and put it down without a single additional remark. This faculty gives us the notion of substance, and forms the class of ideas represented by substantive nouns—as *man*, *beast*, *horse*.

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matic arch corresponds with the posterior inferior portion of the zygomatic suture, and with that part of the arch at which the ascending portion terminates and the descending portion begins. This may be very distinctly recognised in the living head by passing the finger along the under edge of the zygoma.

* Gall merely from seeing the bust of Napoleon placed along side those of the Austrian generals, predicted the astonishing victories of Italy.—*Phren. Journal.*

This organ produces capacity for details in regard to objects that exist, and therefore is necessary in natural sciences, as Botany, Zoölogy and Mineralogy. It produces distinctness of detail in narration, and was large in Defoe and Swift; the first showing it in Robinson Crusoe, the second in Gulliver's Travels. It was small, as you see, in Voltaire, who, in regard to things that exist, was one of the most inaccurate of writers. His histories have appropriately been called historical romances. By enabling the player to recollect what cards have been played, it enables him who possesses it well developed to excel in whist. Persons in whom it is large possess one important element of the talent for practical business; but if the reflecting faculties be deficient, there will be no depth nor comprehensiveness of understanding.

In ordinary life you will find persons who go through the world without observing things that exist around them; others, who see and note every thing. In the former, this organ will be found small; in the latter, large. I knew a gentleman who walked up Prince street, Edinburgh, many times, without once observing the Castle, which stood at his side. To those not acquainted with Edinburgh, I may state that Prince street is about one mile long; that along the south side of it there is a ravine, across which is a rock two hundred and fifty feet high, surmounted by a castle; and this is the object he did not so much as see. Such persons go about in a sort of revery.

As a contrast, I will give you the character of Miss Pratt, drawn by the author of the Inheritance: "But people who make use of their eyes," says the author, "have often much to see, even between two doors; and in her progress from the hall to the drawing-room, Miss Pratt met with much to attract her attention. True, all the objects were perfectly familiar to her; but a real *looker*, like a great genius, is never at a loss for a subject: things are better or worse since they saw them last; or, if the things themselves should happen to be the same, they have seen other things either better or worse, and can therefore either approve or disapprove of them. Miss Pratt's head, then, turned from side to side as she went along, and a thousand observations and criticisms about stair carpets, patent lamps, hall chairs, slab tables, &c. &c. &c., passed through her crowded brain." "Miss Pratt appeared to be a person from whom nothing could be hid. Her eyes were not, by any means, fine eyes; they were not reflecting eyes; they were not soft eyes; they were not sparkling eyes; they were not penetrating eyes; neither were they restless eyes, nor rolling eyes, nor squinting eyes, nor prominent eyes; but they were active, brisk, busy, vigilant immovable eyes, that looked as if they could not be surprised at anything—not even sleep. They never looked angry, nor joyous, nor perturbed, nor melancholy, nor heavy; but morning, noon and night they shone the same, and conveyed the same impression to the beholder—namely, that they were eyes that had a look—not like the look of Sterne's monk, beyond this world, *but a look into all the things on the face of this earth.*"

Now this is an exact description of a mind actuated by predominant Individuality, which is the great organ in discovery by observation. To suppose men foolish who have retreating foreheads is a mistake. Many brilliant philosophical discoveries have been made by persons largely endowed with perceptive faculties, whose reflective faculties have not passed mediocrity.

Individuality is of great importance to the artist. Without its full development there is abstractness of conception and vagueness of expression, with it large there is distinctness and reality. It gives the tendency to personify notions and phenomena, to ascribe existence to mere abstractions of the mind, such as 'Giant Despair,' in Pilgrim's progress. It is generally small in the Scotch, larger in the English, and still larger in the French.

23. Form.

This organ lies on each side of the small bone which you may perceive inside this skull, behind the top of the nose, and which is called the Christa Galli. When deficient, the orbiter plate approaches close to the sides of the crest, and then the external width across the nose from eye to eye is small; when large, there is a considerable space between the plate and crest, and consequently great breadth across the nose. By the distance between the eyes, therefore, we judge of the size of this organ.

Dr. Gall discovered and named it the organ of the Knowledge of Persons. Spurzheim, on more rigid analysis, concluded it to be the organ which takes cognizance of configuration generally, and remarked that it is this power which disposes us to give a figure to abstractions, as that of an old man to God, and a skeleton to Death. It is essential to portrait-painters, and greatly aids the naturalist. To it Cuvier owed much of his success as a comparative anatomist. The figure of an animal or of a bone never left his mind, but served him ever after for the purposes of comparison. Suppose that in January he had seen a bone, the exact form would be indelibly fixed on his mind. If in six months he should find another, this would be compared with his conception of the previous bone, and its form also would be indelibly fixed upon the mind. Every fact, in short, which he obtained, became linked with every other fact, and he was thus enabled to make his astonishing developments in Osteology.

In the Chinese, Form, is very large; and this seems to me to explain what appears so puzzling with regard to their written language. By the combination of twenty-six letters or characters we produce all our words. The Chinese, on the contrary, have a separate character for almost every word—which renders their language difficult of attainment to Europeans. Their large organ of Form probably gives this singular people the power both of contriving and retaining these characters.

24. SIZE.

This organ is placed at the internal corner of the eye, on the side of Individuality. The faculty of distinguishing Size differs from that of distinguishing Form, for the size may be the same and the form different. Size and distance are alike; when speaking of the latter, however, we think of the two extreme points of whatever we refer to; when of the former, we think of the substance between these points.

Perspective is the law of the proportion of distance. It therefore depends on Size principally, which organ is accordingly necessary in landscape painting. One day fifteen or sixteen years ago I was sitting in the drawing-room with Sir George Mackenzie, looking at a landscape, when Mr. Ferguson, tutor in Sir George's family, said—"That seems to me a plane surface, exhibiting differences of light and shade.—Now I am told that to some people different parts appear at different distances, and that to them it seems to have a fore and a background." We were surprised at this observation, and asked to what he attributed his inability to see the landscape like other people. He replied to his want of a mathematical education. We asked whether he could distinguish in nature that objects were at different distances. He said he could. I then asked whether if he shut his eyes after looking at objects, he could conceive their relative distances. He said he could not. We took a cast of his face and forehead, and found Size decidedly small.

Sir Walter Scott said that he had an eye for natural scenery, and, at one time, a great desire to draw, made many efforts, but in vain: he could not bring out the effect. In his head this organ was distinctly deficient.

In Mr. Douglas the painter, on the contrary, this part is large, and the manifestation corresponds. When a mere child he was struck with the seemingly different distances from each other of the near and far ends of ploughed ridges, crawled across the fields, before he could well walk, to measure the actual distance with a stick, and was lost in astonishment on finding that no difference existed notwithstanding the difference of appearance.

This organ large gives great accuracy of eye. A person so favoured could draw a circle without the aid of an instrument, or point out the exact centre of one already drawn. Being an officer in the army, he found himself able to make his soldiers fall from column into line with great exactness, estimating correctly the space to be occupied by the men, which many officers could never learn to do. Locality, also, was largely developed, which would doubtless aid him in this practice.

25. WEIGHT.

This organ lies along the superciliary ridge, one third of the length of that ridge outward from the nose. Bodies may be of all forms, sizes and colours, and yet none of these features would imply that one was heavier than the other. It is clear, too, that we have an instinctive faculty which leads us to put forth muscular effort proportionate to the resistance to be overcome. To illustrate this, suppose a large body of heavy material to be lifted: considerable effort would have to be employed. But suppose the object not to be such a body, but merely its representation, consisting of materials differing much in weight, then would be seen in the want of proportion between the muscular effort and the object to be accomplished, the great importance of the instinctive agency. I have known a little humour manifested in this way: a shopkeeper got a pasteboard frame made, and employed an artist to paint it so as to represent precisely a fine old cheese. When his acquaintances came in, he would show them a large, heavy cheese, and ask them to lift it. Having done so, he would point out the fictitious cheese and desire them to lift that also, that they might compare the weight. To do this they put forth an effort equal to the former one; the arms jerked upward, and the apparent cheese flew to the ceiling. Weight is the faculty which proportions the force to the resistance. When large, it gives skill to the player at quoits. In turning, it enables the turner to press with the required momentum. You will find it large in good skaters, those for instance, who lean so much outward, and describe well the figure 8. They are enabled by a large development of Weight, to adapt precisely their degree of inclination to their velocity and to gravity. To rope-dancers it is essential. In Maclaughlan, a weaver of Saltcoats, who spent much of his time in inventing machines for the regulation of the stroke of the common pump so as to make the working-rod move with the same momentum up and down, we see it very large; also in the head of Stevenson, the inventor of a superior locomotive engine—and in this of Brunel; it is very large, too, in Dr. Chalmers, who represents himself as taking an interest in engineering, and as having a constant tendency to illustrate his sermons by reference to it and astronomy. In blowing crown glass there is an advantage as regards the excise, which I cannot specify, in making the circle of glass just nine pounds and a half; and when visiting a manufactory at Newcastle I was told that expert workmen would generally come within from a quarter of an ounce to an ounce. Some were utterly unable to acquire this tact, and consequently had to be put back to work which brought them in six or eight shillings less a week. I noticed that in those who had this peculiar tact the organ of Weight was very largely developed. In Hunter, the great surgeon, this organ seems to have been occasionally diseased, on which occasions he had not the power of preserving his equilibrium. "His own feelings," says Sir E. Home, "*did not give him information concerning the centre of gravity.*" During intoxication this organ is disturbed: hence the complaint of drunkards that the earth plays them such sad tricks when they take too much liquor. In archery it is necessary to estimate the momentum requisite to send the arrow to the proposed distance and with the required force. To this, Weight is essential. In Scotland a company of archers dates its origin before the introduction of gun-powder, and some gentlemen, with this organ small, not knowing that any peculiar faculty is required, join the society and attend the exercises for three or four months, but finding their inability to compete with the others, they cease their attempts and are merely found at the dinners and suppers of the society. Good horsemanship greatly depends on this faculty. Some men never learn to ride well; they sit on their horses as Scott makes James VI. do, "like a sack of oats." Mr. Richard Edmondson of Manchester mentions that a great number of observations have led him to the conviction that this organ gives the perception of perpendicularity. He employs men to engrave figures on copper for the purpose of printing cloth; and notices that those who can draw perpendicular lines without a ruler have this part large. He employed a person to build for him a chimney; some of the workmen could build a square yard of wall without once applying the plumb line, others applied it to every brick. The master-builder was angry at these last, and said they were wasting his time. "See here," said he, taking a trowel and building up a square yard of wall merely by the eye. "That may be easy for you," said the men, "but we cannot do it." The master, however, would not believe their assertion, but, like a mental philosopher, maintained that what he could do, they could do, if they would try. Mr. Edmondson noticed that in those who worked by the eye this organ was large. He maintains that it not only perceives the perpendicularity but the *direction* of force, and in particular the direction of the gravitating force of our bodies.

26. COLOUR.

This organ is situated in the middle of the superciliary ridge. When large it gives an arched projecting appearance to the eyebrow. Recollect that the organs of which I now treat are not confined to the superciliary ridge, but extend a short distance above it. Dr. Gall discovered this organ by comparing together the heads of painters distinguished for colouring. In the collection of a passionate amateur of colouring, he saw a collection of portraits of both male and female artists, who had distinguished themselves in this department of the art; and in all, the region immediately above the middle of the eyebrows was extremely prominent.

In order that we may see an object, rays of light must pass through the pupil to the retina; the impressions there produced must be transmitted by the optic nerve to the anterior pair of the corpora quadrigemina. To distinguish colour, the impression must pass forward to the organ of Colour.

This is a cast of Mr. James Milne, brass-founder, of Edinburgh, in which you perceive the eyeball to project beyond this organ. The middle of the superciliary ridge is truncated. Contrast it with this of Douglas the painter. Mr. Milne cannot distinguish green from bright scarlet, and his grandfather on the mother's side, was deficient in this respect. In himself and two brothers, it appeared in a decided manner, while his sisters, four in number, can distinguish colours easily. Mr. Milne is rather near-sighted, but never found spectacles to aid his defect. He excels in distinguishing forms and proportions, he is fond of shooting, but can only see the game in the sky-light. When a large covey of partridges rose within ten or twelve yards of him, the back ground being a field of Swedish turnips, he could not perceive a single bird. Mr. Milne was bound apprentice to a draper, and for three years and a half continued in his service. He fell into considerable mistakes about colours, which for a long time were attributed to inexperience and ignorance of the names of the tints. At length, however, after selling a piece of olive corduroy, for breeches, the purchaser requested strings to tie them with; and Milne proceeded to cut off what he considered the best match, when the person stopped him and requested strings of the same colour as the cloth. Mr. Milne desired him to choose for himself; but being confident that the purchaser was wrong, he cut off a piece of the cloth, a piece of the string which he intended to give, and a piece of that which the purchaser chose, and carried them to his mother. She told him that his ribbon was a *bright scarlet* and the other a *grass green.* His masters would not believe in this defect, and it was only after many mistakes and some vituperation, that he was permitted to renounce the business, and betake himself to that of a brass-founder, for which he had a natural disposition and talent, for when a mere boy, he had used the turning-lathe in fashioning play-things. He knows blues and yellows certainly, but cannot distinguish browns, greens and reds. In the rainbow he perceives only the yellow and the blue distinctly: he sees that there are other tints, but cannot distinguish or name them. When in Glasgow, his great coat was carried off, by mistake, from the travellers' room, and when he inquired of the waiter what had become of it, — the man naturally asked its colour. This completely puzzled Mr. Milne, though he had worn it a year, and he replied that it was either a snuff brown, or an olive green, but which he could not tell. The waiter looked as though he suspected Mr. Milne of a wish to get some other person's coat rather than to recover one of his own; it was found, however, and Mr. Milne has ever since carried in his pocket-book a memorandum of the colour of his coat. I know Mr. Milne very well, and had these particulars from himself. He is distinguished for the beauty of his ornamental lamps and other articles. Many similar cases are on record.

Those who have the organ large take pleasure in arranging colours in harmonious combinations. They find that the primitive colours, blue, yellow and red, do not harmonize; but if we place between two primitive colours, a colour formed by combining them, harmony will be the result: for instance, if we place green between blue and yellow, violet between blue and red, or orange between red and yellow, the effect is always pleasing. We frequently see great violations of good taste in the dress of ladies in the streets of London, and also in this city. In the arrangement of rooms this harmony is often violated; for instance, I have seen a room with yellow walls, a green carpet, and scarlet covered chairs.

This organ is very large in Audubon, the ornithologist, an excellent colourist. In Haydon you see it very large. It is generally larger in women than in men. It is generally very small in blind persons. This has been noticed by Mr. Silas Jones, Governor of the Blind Asylum of your city, an intelligent phrenologist. It is very small in the Esquimaux, which may be explained by its lack of exercise through successive generations, as they hardly ever see any colour except white. Capt. Parry and others have noticed the feebleness of manifestation among them. In the Chinese this organ is very large, with large Form but small Size. This seems to me to account to some extent for their defective taste. While the form is accurately delineated and the colouring brilliant, there is no perspective in their drawings.

Colour forms one element in the passion for flowers. I knew a legal practitioner, in whom this organ was large, so engrossed by this passion as to neglect his professional duties,

Some blind persons can distinguish colours by the touch, but I cannot conceive that they have any precise notions of colours. A blind man in Stirling distinguished colours with great accuracy by means of touch. He practised chiefly on the dresses of persons promenading in the beautiful walk round Stirling castle, and the skin on the points of his fingers had by this operation acquired extraordinary softness and delicacy. I have seen him rub his hand along the pile of the sleeve and distinguish with great readiness and accuracy a black coat, a brown coat, a blue coat and a green one. But he confessed that he had no conception of what we call colour, but that he was guided by a certain feel which each particular colour imparted.

LECTURE X.

27. LOCALITY.

This organ lies a little above the internal corners of the eye, on each side of Individuality. Dr. Gall mentions that his taste for natural history led him frequently into the woods, to catch birds, or to discover their nests; but he generally found it impossible to retrace his way to a nest which he had discovered, notwithstanding his precaution to cut marks on the trees and stick branches in the ground. On this account, he was obliged to take with him a schoolmate, named Scheidler, who, with the least possible effort, went directly to the place where a snare was set, even though they had laid ten or fifteen in places not familiarly known to them. As Scheidler possessed only very ordinary talents in other respects, Gall was struck with his facility in recollecting places, and frequently asked him how he contrived to guide himself so surely; to which he replied by by asking Gall in turn how he contrived to lose himself every where. Gall moulded his head, and afterwards moulded the head of a celebrated landscape-painter, who had an extraordinary memory of places; and that of Meyer, author of Dia-na-Sore, who found no pleasure except in a rambling life, and had an astonishing facility of recollecting the different places which he had seen. On comparing attentively these three heads, he was struck with the correspondence which they presented in this region, all having two prominences commencing near each side of the nose and going obliquely upward and outward almost as high as the middle of the forehead. Innumerable subsequent observations proved that the organ of the faculty for recollecting places is situated in this region.

This is the faculty which enables us to take cognizance of direction; it gives great facility, when large, of recollecting places, and of learning geography. Many have wondered at the accuracy with which the Indian travels through trackless forests. It is owing to the large development and activity of this organ, that he is enabled to keep a map of the country in his head, and a chart of his course. If he has to turn aside half a day's journey, on account of some impediment, he knows the direction and amount of deflection, and can compensate for it. This is the cast of Mungo Park, in which it is very large. He has in other respects a beautiful development. Mr. Park was a surgeon who had such a passion for travelling that he left his native country to penetrate into the interior of Africa. The busts and portraits of Columbus, Cook, Galileo, Kepler and Newton, show a great development of this region. Locality is almost monstrous in the head of Mr. Dunn, Surveyor of Coal Mines at Newcastle, England. In working mines, it is necessary to leave pillars for the support of the roof; and as the mining is carried on in various directions and all under ground, it is found to be very difficult to tell the exact boundaries of the respective mines, and the direction in which the miners should work. Mr. Dunn has an instinctive knowledge of the direction of whatever places he may have visited, and can direct the workmen with the greatest accuracy.

Readers endowed with large Locality, are delighted with descriptions of natural scenery, such as are found in the writings of Sir Walter Scott, who wrote so pictorially that he almost saves the artists, who may illustrate his pages, the trouble of invention.

This is the cast of James Wilson of Belfast, who lost his sight from small-pox at four years of age. His right eye was subsequently couched, and he saw till he was seven, when a furious cow completely extinguished his vision. After becoming blind he acquired such an accurate and extensive knowledge of places, as to be able to act as a kind of courier to the merchants, to the extent of forty miles round Belfast. They considered him a most trustworthy messenger; he knew every foot of the country: and though he could not travel as fast as others, much more dependence could be placed on him; for, as he himself told me, he never saw any thing to divert his attention, and never stopped at the whiskey-shops on the way. In him you perceive Locality to be exceedingly large, while Colour seems hardly to have grown since infancy.

I have noticed Locality to be large in chess-players. Those in whom Size and Locality are both large, have an instinctive faculty of learning to distinguish the situation and development of the phrenological organs. Those in whom these organs are small, cannot readily do so.

In Dr. John Hunter this organ seems to have been disordered; at one time, when in the house of a friend, he forgot in what part of the town he was, and looked in vain out of the window to refresh his memory. "He had no conception," says Sir Everard Home, "of any place existing beyond the room he was in, yet was perfectly conscious of the loss of memory."

This organ is possessed by the lower animals, and they sometimes manifest it to an extraordinary degree. Gall says, a dog was carried in a coach from Vienna to St. Petersburgh, and at the end of six months reappeared at Vienna. Another was transported from Vienna to London, but found means to return to his native city. Kirby and Spence, in their work on Entomology, relate the following anecdote: An ass shipped at Gibraltar on board the Ister frigate, in 1816, was thrown overboard when the vessel struck at Point de Gat, in Spain, a distance of two hundred miles. He found his way back to Gibraltar, presented himself at the gates one morning, and when they were opened, walked in and went immediately to his stable. His not being stopped on the way is accounted for by the fact that he had holes in his ears, indicating that he had been used for carrying criminals when flogged; and for such asses, the peasants have a great abhorrence. The falcon of Iceland returns to its native place from a distance of thousands of miles; and carrier pigeons have long been distinguished for a similar tendency. Gall attributes the migration of birds to a periodical and involuntary excitement of the organ of Locality.*

Since I lectured last in this city, Mr. Sampson has communicated to me some remarks tending to show that the perception of "direction" depends on the organ of Size. He is deficient in the organ of Locality, and feels an extreme difficulty in knowing his locality in a city or in becoming acquainted with the relative positions of objects, but he has an instinctive facility in knowing the direction of places. His observations will be found in the American Phrenological Journal and are interesting. I consider the ultimate faculty of Locality as still involved in obscurity, although the effects which it produces are certain.

28. NUMBER.

This organ is somewhat difficult to observe; when large, it gives fullness to the outer angle of the eye, and a little to the side, a very little below the point called the external angular process of the frontal bone. You see it large in the mask of George Bidder, of Zerah Colburn, and of Humboldt the mathematician, brother to the traveller of the same name.

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* I have always observed that when a fresh hive has been brought to my garden from a distant place, the bees employ themselves, on first leaving it, not in collecting honey, but in making themselves acquainted with all the neighbouring objects. Gleanings in Nat. History by E. Jessie. p. 226.

Gall discovered this organ by comparing the heads of two boys remarkable for their powers of calculation. Beside presenting the appearances before mentioned, the eye was in some measure covered by the outer extremity of the eyebrow. He afterward visited Baron Vega, a famous calculator, and the public schools; and invariably found this part prominent in connection with great arithmetical talent.

Arithmetic and Algebra depend on this organ; but Geometry, and other of the higher branches of mathematics, depend on other faculties. This opinion is not the result of speculation, but of observation. George Bidder, when only seven years of age, and without instruction, showed an extraordinary talent for mental calculation. When only eleven, I saw him solve the most complicated questions in algebra more rapidly than the most expert accountant could put the operations down. When he first came to Edinburgh, and before I had seen him, Mr. Moir, surgeon, waited on me, accompanied by three boys of nearly equal age, and said—" One of these is George Bidder; can you tell me which is he by his head?" I was then desirous of seeing remarkable cases, and I told him that I should be glad at any rate to examine the boys. I did so, and remarked that the first one could not, I was certain, be George Bidder, as in him the organ was deficient; that the second should have considerable powers of calculation; but that the third should be George Bidder, because in him the organ was remarkably developed. The gentleman assured me that I was right. The first was his own son, to whom instruction seemed unable to impart any arithmetical knowledge; the second was the most expert calculator selected from a school in Edinburgh; the other was Bidder himself. Expecting to make Bidder an extraordinary mathematician, they gave him the best instruction. In a letter to Professor Baird, I said—" I fear you will be disappointed in your hopes of making Bidder a great engineer." I founded this opinion on the fact that the organs, the great development of which constitute mathematical genius, were not of more than ordinary size. This was looked upon, of course, as a piece of phrenological folly. One day I met Professor Wallace the mathematical teacher of Bidder: "What do you say to your phrenology now?" said he. I said I would be glad to know what he meant. "Why," said he, "I mean this: George Bidder, who you said would be such a great mathematician, has been two years in my class, and does not evince as much genius as many others. This shows the nonsense of your science." I told him to go and ask his friend, Principal Baird, to inform him what I had said two years previous.

I can speak on this subject the more decidedly, from being myself very deficient in this faculty, notwithstanding my exertions to cultivate it. Arithmetic has always been to me a profound mystery, and, to master the multiplication table, an insurmountable task. I could not now tell you how many eight times nine are, without going to work circuitously and reckoning by means of the tens. Yet for seven years I studied arithmetic. This deficiency has been the occasion of much trouble to me. I could understand every thing relating to accounts, but had always to employ clerks to perform calculations. This faculty in me is, in fact, idiotic, and the organ is very small. Were my other powers in like condition, I should be totally unfit for the ordinary business of life.

This organ is found very small, and the faculty very feeble, in some nations and tribes. In this skull of a North American Indian, it is very little developed; and I am told that in the various agreements by which your Government has engaged to pay a certain amount of money to the Indians, it has been found impossible to make them comprehend the amount, beyond a very small sum. Hence have arisen difficulties and dissatisfaction. The Greenland tribes consider a number exceeding all their fingers and toes, innumerable.

Number and Individuality both large, give facility in recollecting dates, Form aids in the recollection of printed numerals.

In 1835, I saw, at the Lunatic Asylum of Newcastle, a patient named Marshall, in whom Number was largely developed. Mr. Mackintosh the surgeon, finding him continually employed in covering paper with arithmetical calculations, took it away for the purpose of allowing the organ repose; but he then used the slate. That being taken away, he used his nails to scratch with upon the wall. His hands being tied behind him, he used the tip of his tongue to trace figures on the wall with saliva, and kept at work, adding, subtracting, multiplying and dividing, as well as he could in this way; his tongue was excoriated by the novel application to which it was subjected.

This faculty seems to be possessed in some degree by the lower animals. George Le Roy states that magpies count three, and founds his opinion on the following facts: To annihilate this ravenous family, game-keepers try to kill the mother while she sits. Many, however, desert their nest as soon as any one approaches. The plan is then to make an ambush and watch for her return; but she watches also; and if one man passes in, she does not approach till he has retired. To deceive the bird two men enter the ambush, and one goes away; but still she waits for the other also to retire. Then three enter, and two go away; but still she keeps an accurate reckoning; finally it is found necessary that five or six should enter the ambush; she then becomes confused; returns while one still remains and she is then shot. This has been often repeated, with like success.

29. ORDER.

This organ is situated at the external angle of the superciliary ridge, and often gives squareness to the lower part of the forehead. This is the cast of a French M. D.

who manifested the faculty very strongly. Contrast, as regards this region, the head of Franklin, one of the most orderly, with that of Curran, one of the most slovenly of men. When I lectured in Dublin, just ten years ago, a gentleman said to me, "Would you like to see the appearance of Curran when he looked his best?" I said, "Yes, I should." So he took me to see what was considered a perfect likeness of the famous orator. The painter had evidently done all he could to make Curran look like a gentleman, but had been unsuccessful; the marks of dirt and slovenliness were too prominent in his whole dress and manner, to allow him a chance of success. The gentleman told me that Curran was, in fact, the greatest slattern that ever lived.

The function of this organ is to give the desire of physical arrangement, of order and method in relation to physical objects. Classification, generalization and systematizing, in science or philosophy, depend on the reflective faculties.

I have seen several instances in confirmation of this. Mr. L.'s forehead, as you see, presents a great development and squareness of this region; and in his dress, wardrobe, and all his professional and domestic occupations, his love of order was conspicuous. This trait was hereditary, his father on one occasion, having missed his pen-knife from the accustomed pocket, summoned before him his relatives and domestics, and demanded whether they had seen it. Being answered in the negative, he unhesitatingly declared that it *must* have been stolen; and being requested to search his other pockets, he became quite indignant, and exclaimed that for twenty years his knife had been in no other. He was at length, however, prevailed on to search: and was quite confounded and mortified, on discovering that he had really put the knife in his left pocket instead of in his right.

Dr. Spurzheim mentions an idiot at Paris, who could not bear to see a chair or other object out of place; and another at Edinburgh, who avoided her brother's room, on account of its confusion.

The Esquimaux are described by navigators as a most filthy, slovenly and disgusting race; and in them, as you may see by this specimen, the organ is very small.

I have now treated of the organs which enter into activity in mathematical studies. An opinion is prevalent, that mathematics afford exercise to the reflecting faculties, that their tendency, as a branch of education, is to cultivate the talent for general reasoning. To me this appears altogether erroneous. Geometry treats of the proportions of space; algebra and arithmetic of the proportions of numbers; and the three form the great elements of pure mathematics. For judging of the proportions of space; Size, Locality and Individuality, aided by Comparison, are the faculties required: and for judging of the proportions of numbers; Number and Order are the great faculties, also aided by Comparison. Now causation always implies power, force, or agency; and the idea of these does not at all enter into the propositions of pure mathematics. It follows, therefore, that persons may be great in mathematics, who are indifferent reasoners; and great reasoners, who are poor mathematicians. This is the opinion of the great masters in philosophy. Bacon observes, that "The mathematical part in some men's minds is good, and the logical is bad; some can reason well in numbers and quantities, that cannot reason well in words." I was led to investigate this subject, and to analyze the mathematical genius into its elements, by observing that Causality is often deficient in the most famous mathematicians. In Sir Isaac Newton himself, the upper region of the forehead is by no means large; but the lower part, especially in the region of Locality and Weight is very great; and though he was extraordinary as a mathematician, his manifestation of general reasoning power was by no means remarkable. The head of the late Professor Leslie possessed the same general development; and he was deficient in the power of tracing logical sequences. On the contrary, Bayle, though possessed of powerful and acute reasoning powers, could never make much progress in mathematics.

Dugald Stewart remarks that " When it is stated in the form of a self-evident truth, that magnitudes which coincide, or which exactly fill the same space, are equal to one another, the beginner readily yields his assent to the proposition; and this assent, without going any farther, is all that is required in any of the demonstrations of the first six books of Euclid." This is strong testimony to the fact, that the relative proportions of space or magnitude constitute the principal subject of mathematical education, and that causation is not at all implied. This you will readily understand by an examination of this chart which contains all the geometrical figures. It is evident that a comparison of the relations of these figures to each other, which constitutes the science of geometry, has nothing whatever to do with the consideration of force, power, or agency. Professor Leslie says that " the whole *structure of geometry is grounded on the simple comparison of triangles.*" Mr. Stewart corrects this remark by observing, that " D'Alembert has mentioned another principle as not less fundamental, *the measurement of angles by circular arches:*" but you will observe that both triangles and circular arches are merely forms of space.

It seems to me perfectly obvious, therefore, that while the mathematical sciences may be employed in the measurement of forces which operate with undeviating regularity, they cannot be employed in cases where the forces are not equable. Human actions proceed from intellectual perceptions, moral impulses or the force of passion. Now it is obvious that these do not possess that uniformity of operation which is indispensable to the application of mathematical measurement. In judging of human actions we must, by sagacity and experience, estimate the influence of internal impulses and external circumstances; and in doing so, Comparison and Causality are principally operative: whereas in mathematics Causality is quite inactive.

In the above remarks I allude to pure mathematics, or geometry, algebra, arithmetic and their branches; and I think what has been advanced quite sufficient to establish the folly of those teachers, who, as in the University of Cambridge, England, keep young men for years at mathematical studies, to enable them to judge of the nature, force and direction of the motives, which produce human actions.

30. EVENTUALITY.

This organ, when large, gives prominence or rounded fullness to the middle of the forehead. In the head of Dr. Franklin you see it small; in the head of Pitt very large, there being a prominence in his head exactly where that of Franklin is most deficient. Individuality gives the power of observing things that exist as objects of still life; Eventuality recognises their activity. When we say the *horse gallops*, the noun springs from Individuality, the verb from Eventuality. Gall included this organ and Individuality under the term Educability; but from the upper part being often small when the lower part was large, and large when the lower part was small, we long deemed this the region of two organs, which we called Upper and Lower Individuality, concerning the precise functions of which, however, we were in doubt. The following incident did much to clear up my own views, and I relate it, hoping that it may be of equal service to you. There was a great review, at which many spectators were present. I dined with a number of gentlemen who had attended, and asked one of them what regiments were on the field? He said he did not know. I asked him if he remembered the numbers on their knapsacks? No, he did not notice them. I asked him if he saw the facings of the regimentals? No, he did not recollect seeing them. I then asked him what he did see? "Why," said he, "I saw the review."—"And what do you call the review?"—"Why," said he, "I do not call the numbers the review, nor the facings the review, but the evolutions." He then described the marching and countermarching, the movements and evolutions, with the greatest precision. Another gentleman, who was sitting by, said: "I know that the soldiers marched about and formed squares, yet I certainly could not have described the various successive movements as that gentleman has, but I remember what regiments were on the field, their numbers and facings." I was struck with the difference between these two gentlemen, and remarked that Upper Individuality was large in the first, and Lower Individuality in the second. Dr. Spurzheim, in Paris, and we in Edinburgh, discovered the functions of these parts about the same time.

Individuality and Eventuality are both large in Joseph Hume—hence his power of accumulating facts and narrating occurrences. These faculties are extremely valuable to the teacher. The one enables him to acquire knowledge, the other to tell the story. An author in whom Individuality is large and Eventuality small, will treat his subjects by description chiefly; one in whom Eventuality is large and Individuality small, will narrate actions, but deal little in physical description. This is the portrait of Pope; this is the head of Sheridan; in the former, Individuality is moderate and Eventuality very large; in the latter, both are large, and Form and Size considerable. To illustrate the different kinds of composition which these different combinations produce, I solicit your attention to the following extracts from these authors. Pope rarely excels in describing physical existence, but he surpasses in representing action. I should like to see some of you take a pencil and attempt to represent, on paper or canvass, the beautiful lady described in the following passage:

> "Not with more glories in the etherial plain,
> The sun first rises o'er the purple main,
> Than issuing forth, the rival of his beams,
> Launched on the bosom of the silver Thames.
> Fair nymphs and well-dressed youths around her shone,
> But every eye was fixed on her alone.
> On her white breast a sparkling cross she wore,
> Which Jews might kiss and Infidels adore.
> Her lively looks a sprightly mind disclose,
> Quick as her eyes, and as unfixed as those.
> Favours to none, to all she smiles extends;
> Oft she rejects, but never once offends.
> Bright as the sun, her eyes the gazers strike,
> And, like that sun, they shine on all alike.
> Yet graceful ease, and sweetness void of pride,
> Might hide her faults, if belles had faults to hide:
> If to her share some female errors fall,
> Look on her face, and you'll forget them all."

Here we have action, condition and quality almost to the exclusion of substantive existence; and in this description of the lady's face, though he bids us look at it, there is nothing which indicates that he himself had ever seen it.

Sheridan, speaking of a woman and her husband, says:

"Her fat arms are strangled with bracelets, which belt them like corded brawn—you wish to draw her out as you would an opera-glass. A long, lean man, with all his arms rambling; no way to reduce him to compass unless you doubled him up like a pocket-rule. With his arms spread, he'd lie on the bed of Ware, like a cross on a Good-Friday bunn. If he stands cross-legged, he looks like a caduceus, and put him in a fencing attitude, you would take him for a cheveaux-de-frise. To make any use of him, it must be as a spontoon or a fishing-rod. When his wife 's by, he follows like a note of admiration. See them together, one 's a mast the other all hulk; she 's a dome, and he 's built like a glass house. When they part, you wonder to see the steeple separate from the chancel, and were they to embrace, he must hang round her neck like a skein of thread on a lace-maker's bolster. To sing her praise, you should choose a rondeau, and to celebrate him, you must choose all Alexandrines."

You find here that physical appearances are particularly prominent.

In Curran this organ and Comparison are large, but Individuality is deficient. In Sterne it is very small. I have not seen Captain Marryatt, but he exhibits in his works very good Eventuality. It is very large in Sir Walter Scott. Both Individuality and Eventuality are generally large in children. Under the influence of the former they will break their playthings on purpose to see what is inside; the latter gives them great fondness for stories. Dr. Gall maintained, that the facility with which animals may be tamed and educated, depends on the degree in which the region comprising this organ and Individuality are developed.

31. TIME.

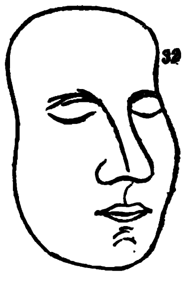
Time is situated on each side of Eventuality. It gives rise to the perception of duration, of the relation in which circumstances stand to each other chronologically. By giving the perception of measured cadence, it is one source of pleasure in dancing, and it is necessary to music and versification. The deaf and dumb frequently manifest this faculty strongly, and are highly delighted with dancing, taking the time by the eye from the violin-player's arm, or at second-hand, but instantaneously, from the other dancers. Lord Kaimes and others say we measure time by the number of ideas which pass in the mind. This is obviously incorrect; for the more we are interested in any occupation, the less clearly we perceive its lapse. On the contrary, when the other faculties are quiescent, Time seems to become ascendant; it goes on measuring time incessantly, and keeps the notion of it continually in the mind. Hence the apparent great duration of unoccupied time. Some, however, have an instinctive knowledge of the lapse of time under all circumstances, and can tell the hour of the day with great accuracy.

32. Tune.

Tune is situated on the lower lateral part of the forehead, under and on each side of the temporal ridge. When large, the forehead is filled up and rounded off in this region, and does not form that rapid ellipsis which you see in this head of Curran. Contrast the head of Handel with this of Anne Ormerod, who was admitted, at twelve years of age, into the Blind Asylum of Liverpool. During two years, means were unsparingly employed to cultivate and improve any musical talent which she might possess; but in vain: the finest music gave her no more pleasure than the rudest noise.

Handel.

Anne Ormerod.



Gall discovered the organ by noticing this part large in a young girl who could repeat whatever she heard sung or played, and who recollected whole concerts, if she heard them only twice; and by afterward examining the heads of all the persons distinguished for musical talent, to whom he could gain access.

This organ bears the same relation to the ear which the organ of Colour does to the eye. The ear receives the impression of sounds, and is agreeably or disagreeably affected by them; but the ear has no recollection of tones, nor does it judge of their relations; it perceives not the harmonies of sound. Harmony is the agreeable combination of various sounds; Melody consists in the succession of simple sounds. For the proper appreciation of the former a larger endowment is required than for the latter, and, in accordance with this, we find that the Germans and Italians have the organ large, and prefer Harmony; the Scotch have it only moderately developed and prefer Melody. Many mistakes occur in relation to this organ, not only from the difficulty of observing it, but from not rightly understanding on what excellence in the musical art depends. Tune gives the perception of Melody, but this is only one ingredient in a genius for music. Time is requisite to a just perception of intervals, to the proper appreciation of harmony; Secretiveness and Imitation to produce expression. But, in instrumental music, the loudness of tone depends on the momentum with which the chords are struck, the due regulation depends on the organ of Weight; large Form and Individuality are requiste to enable a musician to read music at sight, Ideality and a fine temperament should be added to give refinement and elevation, to throw over all the glow of inspiration. Such a combination is extremely rare; hence the scarcity of great musical talent and genius.

These views are not theoretical, but founded on observation. I will relate one circumstance in illustration. Mrs Gibson had two pupils who puzzled her very much. One was passionately fond of music, but learned to play with great difficulty; the other cared little for it, but learned to play with great facility. She asked me if I would like to examine them: I was then investigating this subject and requested her to bring them in, but not to say any thing which would enable me to distinguish them. On examination I found that one had very large Tune, but deficient Weight and Time. This young lady, said I, will take intense interest in hearing music, but have little power of execution. The other possessed moderate Tune only, but large Imitation and Weight. This young lady, I remarked, may be trained to make an excellent performer, but there will be no soul in her music. She will be one of the great number who devote so much time during youth, in acquiring an art which is thrown aside the moment they pass from parental control, or enter on the graver duties of life. Mrs. Gibson said that this discrimination between the talents of the young ladies was perfectly correct. Ten years afterwards I dined with a gentleman whose lady said to me, "I suppose, Sir, that you do not recollect me, though we have met before." I said I did not, and should like to be informed where I had previously seen her. "Do you recollect," said she, "examining two of Mrs. Gibson's pupils on their musical capacity?" I told her I did. "Well," she continued, "I am the one who you said would, notwithstanding her ability, give up playing as soon as she had any thing of importance to attend to: there is my instrument; it has had a string broken these three months; but so little interest do I take in music, that I have not thought it worth while to get it repaired." Subsequent events have led the lady into society in which music is a source of entertainment. She has re-strung her harp and puts her talents occasionally to use. She possesses so much musical talent that she can perform well, when any of her other faculties furnish her with a motive to do so.

This organ is sometimes diseased. Dr. Combe attended a young lady who complained of acute pain at the external angle of the forehead, precisely in the situation of the organs of Tune, which were largely developed, and upon which, in describing the seat of pain, she placed most accurately the points of her fingers. . Two days afterward she still complained of pain in this region, and stated that she had been dreaming a great deal of hearing the finest music. The next day she mentioned the recurrence of her musical dreams. But what is very remarkable, the excitement of the faculty of Tune reached, during the day, a height which could not be controlled: the patient felt, not to say a desire only, but a strong and irresistible passion or craving for music, which it was painful beyond endurance to repress. She insisted on getting up and being allowed to play and sing. That being inadvisable, she begged to have a friend sent to play for her; but the craving becoming intolerable: she seized a guitar, lay down upon the sofa, and fairly gave way to the torrent with a volume, clearness and strength of voice, and a facility of execution which was astonishing. Regarding these phenomena as arising from the over-excitement of the organ of Tune. Dr. Combe directed the continued local application of cold, and such other measures as tended to allay the action, and the lady soon regained her ordinary state.*

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* In thinking of time, the eyes are turned upward; and in calculating, they are cast downwards and outwards. Spurz. Phren. Vol. i. 324.

LECTURE XI.

33. LANGUAGE.

A LARGE development of this organ is indicated by a prominence or depression of the eyes, which is produced by a convolution of the brain, situated on the posterior part of the orbitary plate, pressing it and the eye more or less forward or downward, according to the size of the convolution. When small, the eye is deeply sunk in the skulk In these heads of Dean Swift, Voltaire, Gibbon, Pope, Dr. Johnson, and Humboldt, you see it very large ; in the head of Frazer, you see it small. There is a difficulty in defining the precise function of this faculty. It takes cognizance, however, of the artificial signs by which we represent ideas. Recollect it gives signs only ; ideas are given by the other faculties. Form gives the idea of a square or circle for instance ; Language supplies the word or sound by which we are enabled to call up the idea in the minds of others.

Metaphysicial authors complain of the indefiniteness of terms ; but phrenology teaches us, that this vagueness arises from the different combination of the faculties in different individuals. As long as men do not agree in their organization, they cannot agree in their conception of the meaning of words expressive of emotion and judgments. Suppose we take the word Conscientiousness, for instance ; the idea attached to it by Melancthon, and that attached to it by Haggart, must differ exceedingly ; no definiteness of expression could ever give the one the comprehensive conception of the other. Again, the idea attached to the word

Colour by a blind man, must differ much from that which it generally represents. So to Anne Ormerod you could not, by any combination of words, give a clear idea of the meaning of Melody and Harmony; nor to Mr. Milne, of Scarlet. In consequence of the difference in the faculties of men, definitions themselves are very differently apprehended. Mathematical language is definite, because not expressive of feelings and ideas which differ in different individuals, but of precise and determinate proportions of space and number. It is utterly impossible, therefore, to frame a philosophical language, like numbers in mathematics, applicable with perfect precision to moral disquisitions. All men agree to use the words justice, charity, and others; but question different persons about the ideas which they attach to these words, and you find that they widely differ.

Education has been conducted on the fundamental error that words can explain words; but you can have no means of knowing their meaning, except the emotion named be felt, and the idea indicated be perceived. The idea may be possessed without the word, and the word without the idea. Hence the absurdity of so much attention to mere words as is now paid; though you put the whole of Johnson's dictionary into the mind of a person, you will not have educated him.

An author will be found to use those words with the most clearness and felicity, which express mental feelings or operations naturally vigorous in himself; but to fail when he attempts to elucidate subjects requiring a large development of such organs as in him are weak. Thus Moore uses epithets and illustrations expressive of attachment with inimitable beauty. Mr. Stewart manifests correctness and elegance in narrative and when treating of the moral sentiments, but becomes loose and inaccurate when he enters upon original abstract discussion, requiring the activity of the higher intellectual powers.

In this head of Sir J. C. Smith, Language is very prominent; in this of Wordsworth, moderate; in this of Canova small. The difference between small Language and large is this: in the former case, an individual has one or two appropriate words for each idea; in the latter, he has several, his verbal affluence is great; and with such an organization as Canova's, he would be able to rise to the highest order of eloquence. When Language is very large, without a good general intellect, it is surprising what a volume of words can be poured forth to express a very few ideas, and sometimes to express no ideas at all. Large Language and Individuality, with great Rapidity, promote punning, and that style of wit designated as "good things," "apropos remarks," "clever hits," which I have seen greatly manifested when the organ called Wit has been very moderately developed.

I have noticed that he is not always the best Latin and Greek scholar who has the largest organ of Language. Such a head as this of Roscoe, in which Individuality, Eventuality and Comparison are large, is well adapted to give readiness in such acquisitions.

The following very interesting case of disease in this organ was communicated by Mr. Hood of Kilmarnock. A person suddenly forgot the *name* of every object in nature, though his knowledge of things seemed unimpaired. When Mr. Hood called, the patient, by a variety of signs, gave him to understand that he was perfectly well in every respect, except a slight pain referable to the eyebrows. He comprehended every word which was spoken or addressed to him, and though he had ideas adequate to a full reply, the words by which to express them were absent. Yes and No, were the only two words which he never entirely forgot. This patient died between two and three years afterward, and a lesion was found in the left hemisphere of the brain, which terminated at half an inch from the surface, where it rests over the middle of the superorbitar plate. It appears to me that the lesion's being on one side only, accounts for his power of understanding words while he had not the power of employing them.

A Presbyterian clergyman of Bath used to object to phrenology, as unsupported by evidence and the authority of good names. His wife was seized with the apoplexy, and when she recovered, her power of using words was found to be impaired, though her other faculties were entire. She could understand language when addressed to her, and articulate perfectly, but could not use words to express her own ideas. After this event, he ceased to condemn the science. She recovered, but for some time after made many blunders. I was told of the following among others: A clergyman came to the table in a somewhat slovenly condition as to dress, and, instead of asking him if he would have some soup, she inquired if he would have some clean linen.

Mr. Brown, of Scotland, who is superintendent of a great lunatic asylum, and an excellent phrenologist, thinks this organ is sometimes singly diseased, in cases where words are sent forth incessantly without meaning or coherency. Physicians should be careful, therefore, to distinguish between actions and expressions, in their investigations and testimony concerning cases of insanity. He thinks that the manifestation of what is called the "gift of tongues" among the Irvingites, and others, depends in part upon derangement of this organ. That the brain is deranged, is sufficiently evident from the appearance of such persons in a paroxysm—the bright, piercing and restless eyes, the extended and waving arms, the unusually deep, full voice, and wild manner, often continue till they fall down exhausted.*

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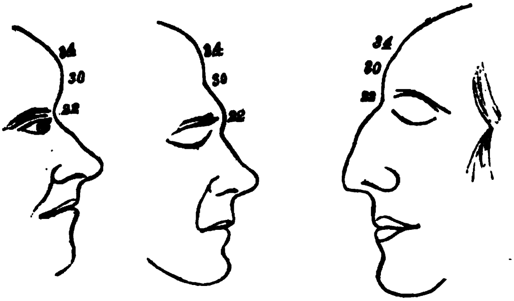
* A man was one day presented to Frederick II., endowed with such a memory, that he recited by heart a considerable piece which he had never heard read but once. The same day, Voltaire had to read some verses to the king. Frederick concealed the stranger behind a screen-

34. Comparison.



1. 2. 3.

1. Pitt.	Indiv. moderate.	Event. large.	Comp. rather large.
2. Moore.	Indiv. large.	Event. small.	Comp. very large.
3. Sheridan.	Indiv. large.	Event. large.	Comp. full.

This organ occupies the middle of the superior portion of the forehead. When predominant, it gives to this re-

and when Voltaire had finished reading, he told him that the piece was neither new nor of his composition; and then made his accomplice appear, who recited it and maintained that he had himself composed it twenty years before. Let the reader judge of the fury of the irascible Voltaire, and of the shouts of the philosopher of Sans Souci. Gall, v. 10.

When one has frequent occasions of observing animals, he learns to understand their language, and knows the different inflexions assumed by the cry of the cock, the chicken, and other birds, according to the sentiment or idea, which they wish to express. I saw a flock of ducks utter confused sounds with all the marks of inquietude; their singular movements fixed my attention; I could not doubt that they were occupied with something that greatly interested them; their inquietude became every moment more visible; at length a duck, that had run from a distance with full speed, threw herself into the court. All her companions received her with marks of the most lively joy; all approached her, extended their heads towards her, stooping down, wagging their tails, and making a sort of reverence. The quacking became more and more animated and all finished by retiring much pleased, into their cover. Now will any one tell me that these ducks did not speak to each other? I am informed of all the wants of my dogs by the different sounds which they utter. My monkey manifests by sounds always modified, the most varied wants, sentiments, affections, and ideas. There are none even to my domestics, who do not understand this language. Gall, v. 30.

gion a rounded fullness. Dr. Gall often conversed with a *savant* possessing much vivacity of mind, who, whenever put to difficulty in proving rigorously his positions, had always recourse to a comparison, and thus escaped at a tangent. By this means he, in a manner, painted his ideas, and his opponents were defeated and carried along with him;—effects which he never could produce by simple argument. He found in his head an eminence in the form of a reversed pyramid in this region. Subsequent instances fully established the organ.

Comparison discovers analogies, resemblances and differences. You perceive it very large in the heads of Sheridan, Chalmers, and Dr. Thomson. In those of Pope, Dr. Johnson, and Gibbon, you see it, Language and Eventuality, very large. We have an organ of Tune which compares tunes; one of Colour which compares colours; and it may be asked—what need is there, then, of a distinct organ of Comparison? Comparison compares things of different natures, as a note and a colour; and combines the results of the other faculties harmoniously. Time would be pleased with good music; but Comparison would be offended at sprightly music, however good, on a mournful occasion. It adjudges the appropriateness of black as the clothing of grief.

This organ takes within its sphere, and shows the resemblances of, things the most opposite in kind. It compares a light seen afar in a dark night, to a good deed shining in a naughty world; or the kingdom of Heaven, to a grain of mustard seed. It finds analogies between the qualities of matter and of mind: Thus we speak of a *beautiful* sentisentiment, a *sparkling* thought, *profound* awe, *light* demeanour, a *solid* argument, *black* despair, a *cutting* reproof, a *heavy* accusation, a *brilliant* conception, an *entangled* oration, a *soft* reply, a *burning* rage, a *freezing* terror, a *hard* answer, a *biting* sarcasm. It is the fountain of proverbs: as "a cat in gloves catches no mice;" "a fat kitchen makes a lean will;" "the sleepy fox catches no poultry," as Poor Richard says. Moore has it of great size; and the Westminster Review remarked that there are two thousand five hundred similes in his life of Sheridan, besides metaphors and allegorical expressions. Its activity is essential to allegories: as the Vision of Mirza.

This faculty attaches us to comparison without determining its kinds; and as we are most familiar with those objects which are related to our most active faculties, from them are our analogies chiefly drawn. He who has Locality large, will draw thence his examples. Dr. Chalmers draws his illustrations from mechanics and astronomy; and the organs which take cognizance of these are large in his mask. Comparison is more rarely deficient than any other of the intellectual powers; and the Scriptures are addressed to it in an eminent degree.

Comparison is large in all popular speakers, as you see in Pitt, Curran and Sheridan. It is large in the North American Indians, who often manifest it. It aids the orator, by giving him a command of figures; and its manifestations are often mistaken for Ideality. But Comparison produces no passion, no intense feeling or enthusiasm; it calmly and coolly plays off its sparkling fire-works; but Ideality infuses passion, prompts the mind to soar after the beautiful, the splendid, and the sublime. Combine large Comparison with great Individuality and Causality, and the similes will be copious, ingenious and appropriate; add large Ideality, and they will now twinkle in delicate loveliness like a star, now blaze in meridian splendour like the sun; while intense feeling and lofty enthusiasm will impart strength and majesty to all the conceptions.

35. CAUSALITY.

This organ is situated on the upper and lateral parts of the forehead, and when large gives prominence to these parts. Franklin is the most splendid instance of Comparison and Causality which we possess. Causality is large in Rammohun Roy, Kant and Burke. Dr. Thomas Brown says: "A cause is that which precedes any change, and which, existing at any time in similar circumstances, has been always, and will be always, immediately followed by a similar change. Priority in the sequence observed, and invariableness of antecedence in the past and future sequences, supposed, are the elements and only elements, combined in the nature of a cause." According to this definition, day is the cause of night and night the cause of day; but this is a definition by means of Individuality and Eventuality merely, and is not complete. In addition to invariable sequence, an impression of power or efficiency in the antecedent to produce the consequent, appears to me to be excited in the mind by contemplating instances of causation in nature; and to be the primitive mental affection connected with this organ. Suppose a bent bow, with the arrow drawn to the head, but retained in that position, be presented; it is an object of still life, of simple existence, exciting Individuality; when it expands and the arrow starts from the string, it becomes an object of Eventuality; but beside, an instinctive impression is generated in the mind of efficiency in the bow to propel the arrow; and this is given by the faculty under consideration. The most illiterate savage would repeat the operation with confidence that the effect would follow. A monkey would not, though it saw the act repeated a thousand times: I have seen this tried. A monkey was kept by a family with which I was acquainted. It was the custom of the boys to shoot at apples on the tree and bring them down. The monkey being very fond of apples, used to pick them up to eat. I wanted to see whether it could be taught to use the bow and arrow for the purpose of supplying itself; I therefore got the boys to bring down apples in this way often in its presence, then leave the bow and arrow with it; but it never attempted to use them. Again it is said that there are monkeys among the rocks of Gibraltar that watch the carpenters at work on the beach, and often see them put wood on their fires to keep them burning. As soon as the carpenters retire they come down, in cold weather, from the rocks, sit around the fire, and warm themselves with the great delight; but though the fuel for keeping up the fires lies all around, they never attempt to replenish them by a fresh supply. It is the possession of this faculty which, more than any other, gives man such an immense superiority over the brutes.

Causality gives the conception of causation in all its forms. It gives facility in divining the motives of men; is an essential element of a profound and comprehensive intellect, and in such as possess great instinctive sagacity, as Napoleon and Franklin. In Wordsworth, as you see, this organ is large, and by its too great manifestation he mystifies his poetry. Some like his poetry very much; others dislike it. I find those who admire it, to have Ideality and Causality large. Wherever Wordsworth is not profound he appears to me puerile. This organ is very large in Brunell, and is the fountain of his immense resources. Here is a mask of Lord Brougham, and it indicates his essential character. His forte lies in the knowing faculties, which are immense, in large propensities and sentiments, great Firmness and Self-Esteem, and an iron temperament; Brougham is a learned and Herculean but not profound man. This is the head of Pitt, the celebrated English Minister, in which you see Causality only moderate; he was not profound, but a great manufacturer of expedients, a master of details, a ready and plausible speaker. Had he possessed enough of Causality, he would have foreseen that the more atrocities the French committed the sooner they would blaze out; that while destroying each other, they were the least formidable to their neighbours—he would have saved his country oceans of blood and countless treasure; but his long administration was one of expedients, his great principle being to mark what Napoleon did, and do precisely the reverse. I consider him to have been a greater evil to England than any other man that ever lived. Gall, as you see, had immense Causality, Comparison, and Individuality, and in his discovery he manifested the great activity of these organs, being the first to notice facts and trace their causes and consequences, which had been presented to the observation of all men for six thousand years. This organ, too, is large, as you see, in Elliotson, Spurzheim, Ariosto, Tasso, Milton, Sully, Lord Kaimes, Bacon, and also in Cobbett, as you see by this portrait.

I have seen a number of striking instances illustrative of Causality in deficient and ample development. A question arose in an evening party concerning the cause of the harvest moon. In one gentleman present, Individuality and Eventuality predominated; in another, Causality was the larger intellectual organ. In an instant the former said that it was owing to the moon's advancing North at the time of her being full. The latter paused for a time, and added: "Yes, sir, you are quite right." Observing that they arrived at the result by different mental processes, I asked them how they knew this to be the case. The first said: "Oh, I recollect that Professor Playfair stated it in his lectures to be so." The other replied: I had forgotten the precise fact, but I recollect the principle on which the Professor mentioned it to depend; by a moment's reflection I followed it out, and arrived at the conclusion which this gentlemen has just announced." This is a striking example of the mode of action of these different faculties. Individuality knows only facts, Eventuality events, and Causality principles.

When Causality is ill developed, facts are not generally considered as having a necessary dependence and connection, however obvious such dependence and connection may be to those in whom this organ is large, such facts will be considered as curious coincidences. From this class of minds, ever ready to catch superficial glimpses, the public received the first accounts of phrenology, and on them is chargeable the misrepresentations which so long impeded its course.

In treating of Veneration, I mentioned that it gives the tendency to worship, while Causality gives the knowledge of God. Suppose the human body be investigated, (and in my opinion no subject is calculated to lead the mind to the conviction of a Deity's existence more certainly than such an investigation,) Individuality and the knowing powers, by examining the structure, would present Causality with data, from which man could unerringly infer that it was made by a great, powerful, benevolent and intelligent Being. Indeed, when a mind in which Causality is powerful, surveys the phenomena of nature, the conviction of a Cause of them arises intuitively and irresistibly from the mere exercise of the faculty. Voltaire had large Causality, you have heard of him as an Infidel, and phrenologists have been told by way of objection that his organ of Veneration was large. It is true that he was an unbeliever in Christianity, and that his Veneration *was* large, but there is no contradiction here. Belief in any religion should depend on evidence; and intellect judges of evidence. Voltaire's Veneration, was manifested in his sycophancy to Kings and persons of high rank: also in his sense of natural religion. He was called, in his own age and country, a fanatic, for erecting a church at Ferney, which stands to this day, with the following inscription upon it: "Erected to God by Voltaire."

MATERIALISM.

I have now described the situation and functions of the various organs; and the question presents itself, What is the substance of the mind? Against phrenology the cry of Materialism has been raised. I shall therefore proceed to consider this subject.

The great error of many is, that they expect to settle the question of immortality by determining the substance of the mind. They seem to suppose that if it be constituted of some very refined and noble material, it must be intended for a glorious destiny; but that if it be made of gross materials it cannot become the inhabitant of any sphere higher than the earth, or have any existence prolonged beyond that of the body. Now this conclusion is unsound. Man has not the power of discovering for what any thing is destined, by an examination of its *substance*. Present the chemist with an acorn—do you think that by examining its substance he can tell that it is destined to become a stately oak? Present him with the egg of a crocodile, and the egg of an ostrich—would he be able to tell you, by examining their substance, which would produce the one and which the other animal? Would you expect him, by chemical or any other form of examination to tell you that the egg of a caterpillar would first turn to a dirty-looking worm, then to an inert chrysalis, and finally burst forth a butterfly radiant with beauty and elegance? You know that to examine the substance in order to ascertain these things would be utter folly; and it is just as futile to attempt to ascertain the nature of mind or its destiny by an attempt to ascertain its substance. All that we can discover of the brain is, that it is composed of water, white and red fatty matter, osmozome, albumen, and various salts; but that the brain is the mind we do not maintain, and think it impossible to prove. Of the substance of the mind we know absolutely nothing. But suppose the soul to be material, how would its incapacity for immortality be proved? By what means would the objector demonstrate it to be *too hard* for the joys of heaven, or *too soft* for the flames of hell?

Materialism is a great phantom which frightens weak minds. I wish they would reduce their ideas to order and to a precise form. They assume that they know that the mind is immaterial, I deny they have any means of determining of what essence it is composed. Reason and Revelation are equally silent concerning the essence of the mind. Again—they assume that phrenology necessarily leads to the belief that it is material. In this assumption they commit two blunders—first, phrenologists profess to know nothing of the essence of the mind. Secondly, If phrenololgy did show, by legitimate evidence, that the mind is material, what would follow. Why, that matter is the best possible substance, inasmuch as mind is the work of the Creator, both in substance and endowment.

This question of substance has, then, nothing to do with phrenology. But though the mind may be immaterial, we must dismiss the supposition that mind can be manifested without matter. Many, indeed, suppose that consciousness determines that we think without material agents; but this is a vulgar error. We are not conscious of an olfactory, gustatory, optic, or auditory nerve; yet all know that to smell, taste, see or hear without them is impossible. It is true, indeed, that we do not feel a material substance within, elaborating thought and emotion, but neither do we feel a *spiritual* substance. Consciousness, therefore, leaves the matter precisely where it finds it.

The question of Materialism is as foolish and unimportant as the one so much agitated in the dark ages, of how many angels can dance on the point of a needle; and has nothing whatever to do with the question of Immortality. "The writers in faveur of the *immortality* of the soul," says Dr. Rush, "have done that truth great injury by connecting it necessarily with its *immateriality*. The immortality of the soul depends on the *will* of the Deity, and not on any supposed properties of spirit. Matter is in its own nature as immortal as spirit. It is resolvable by heat and mixture into a variety of forms; but it requires the same Almighty hand to annihilate it that it did to create it." To ascertain the *qualities* of the mind is the only true mode of discovering man's nature and destiny, and the sphere for which he is adapted. By examing the fins and structure of the fish, you perceive its adaptation to water; by examining the wings and structure of a bird, you perceive its adaptation to the air—so, to understand man's destiny, his qualities must be investigated. And what are these qualities? We find man with faculties which the lower animals do not possess; he is capable of soaring far beyond sublunary space, and comprehending worlds and systems of worlds; he has Hope pointing out futurity as an object of ceaseless anxiety and contemplation, and leading him to a desire a life beyond the grave; he has Ideality, giving aspirations after perfection, which this world cannot satisfy; he has Benevolence, giving him a desire to see these afflictions which men here suffer put far away; he has Conscientiousness, craving for a state of things in which Justice shall reign supreme; he has Veneration, prompting him to more immediate communion with a God whom he adores. Now the intellect knows that these aspirations cannot be fully satisfied by any thing which earth affords, and concludes that there is some other sphere in which they may be gratified. And it is folly to fear that all these glorious aspirations will be defeated, by the Creator having chosen a *wrong* substance out of which to constitute the mind.

INTERVENING LECTURE ON THE TEMPERAMENTS.

Mr. Combe commenced this, by repeating the explanation of the temperaments given in his second lecture. He then remarked that to familiarize the class with the various signs enumerated, he would request members to stand in his place, and allow the rest to judge of their temperament, and at the close of each examination he would make such corrections as he deemed necessary. As a commencement, he subjected himself to examination; on which a gentleman denominated his temperament *nervous bilious*, which Mr. Combe considered correct, remarking that in his younger days, the bilious predominated, but owing to great and long continued mental activity, the nervous now prevails.

During the examinations, Mr. Combe called attention to the three great visceral cavities, remarking that on their relative size, temperament greatly depends. Thus if the abdominal and thoracic cavities be small and the cranial cavity large, the *nervous* temperament is indicated. If the abdomen and skull be comparatively small, and the chest large, the *sanguine* temperament is indicated. The abdomen's predominance indicates the *lymphatic* temperament. He called attention to the many confirmatory instances presented by the examination. In most of the gentlemen examined there was a striking correspondence between the signs before enumerated, the account which they gave of their mental and physical activity, and the relative size of the three great cavities.

An elderly gentleman's temperament was said to be *nervous sanguine*. To this he objected on account of certain conditions of the body, existing in his youth, this led Mr. Combe to dwell somewhat at length on the changes which the temperament undergoes by a long continued course of training. He illustrated his remarks, by relating a conversation he once had with Dr. Spurzheim in which that gentleman informed him, that he had originally, a large portion of the lymphatic temperament, as had all his family; but that in himself, the lymphatic had gradually diminished, and the nervous gradually increased; whereas in his sisters, owing to mental inactivity, the reverse had happened, and, when he visited them, after being absent many years, he found them, to use his own expression, "as large as tuns."

The examination had proceeded for some time, when Mr. Combe invited the ladies to come forward, remarking that in Boston, some had done so, and in Philadelphia, many. After evidence of reluctance some consented, on which the lecturer said, "I cannot allow the occasion to pass without complimenting the ladies on this example. I would say with the greatest respect, that on comparing the ladies of this, with those of the old country; the former appear to me to possess a great deal more *mauvaise honte*. There is a backwardness to come forward on occasions which are perfectly appropriate, lest their conduct should appear bold and singular. Now no one can appreciate female delicacy more highly than I, but when a thing is proper to be done, and the time appropriate, ladies ought to have sufficient confidence to do, what they deem right. They will always be supported and borne out by the good sense and magnanimity of their friends and the community."

The lecturer remarked on the practical examination of heads, that we ought first to take the measurement with a pair of callipers from

The occipital spine to Individuality.
From Concentrativeness to Comparison.
" Ear to occipital spine.
" Ear to Individuality.
" Ear to Comparison.
" Destructiveness to Destructiveness.
" Secretiveness to Secretiveness.
" Cautiousness to Cautiousness.
" Ideality to Ideality.
" Constructiveness to Constructiveness.

"These measurements are for the purpose of determining the absolute size of the head. In speaking of the distinct organs we use the terms *small*, *moderate*, *full*, and *large*, and to each may add *minus* or *plus*. Now, in using these terms, we speak relatively, the relation being between each respective organ, and the remaining organs of the same head; hence the necessity of measurement. Thus I may say of my fingers, that this is small, this moderate, this full and this large; but I might use the same terms in speaking of a child's fingers, though the largest of its hand would be smaller than the smallest of mine."*

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* It would be well if all phrenologists, in their statement of cerebral development, would use a uniform scale of words and numerals, instead of the variety now employed. The following scale appears to me the most appropriate.

1. Idiocy.
2. Very small.
3. Small.
4. Rather small.
5. Moderate.
6. Rather full.
7. Full.
8. Rather large.
9. Large.
10. Very Large.

"After determining the measurements, you should proceed to ascertain the size of the respective regions, by the method before explained.

"Having done this, you should proceed to examine the individual organs; you may at first make mistakes, but return to the same head again and again, until you have become familiar with it. And I would advise you never to examine a head in part; always go through every organ; this creates the necessity of finding the location of each, and in judging of character, saves you from many errors. Perhaps the Edinburgh phrenologists owe their superiority more to their practical knowledge than to anything else. We made it a condition of admission to our society, that every new associate should submit his head to examination by each of the members, who afterwards compared notes; in this way they became so accurate that in six examinations, by different gentlemen, there would be no difference of opinion.

"Do not be discouraged if the character you think the head to indicate does not agree with that which the individual deems himself to possess; a great many persons are unacquainted with themselves. I knew a lady whose character was written out by a phrenologist, and she was so amused with its blunders, as she called them, that she carried it about with her to show it to all her friends. They all recognised the great accuracy with which it described her, and laughed at the graphic description of her self-esteem and singularities of manner; she supposed, however, that they were laughing not at her character, but at the phrenologist.

"I have found phrenology to be of the greatest service to me in choosing clerks and servants or domestic helps as you call them. When in the profession of the law, I never would employ a clerk who had not a large coronal region. And this has been my practice too with regard to domestics, for the last ten years; I would rather trust to an examination, indeed, than to a certificate of character. Being in want of a servant, one applied who had an excellent coronal region and good intellectual development. My niece went to inquire of her character from her late employer, and was told that she was disagreeable, disobliging, and the worst tempered creature she had ever employed. I said this cannot be correct, I will employ her. I did so, she remained with me three years and behaved excellently; she is now married and an exemplary wife and mother. I afterwards learned the reason of this dislike on the part of her former employer. The lady had a smaller brain, less coronal and intellectual region than the servant, she instinctively felt her inferiority; this irritated her, and she became very unreasonable and somewhat abusive, which occasionally roused the servant's self-esteem and combativeness, and produced disagreeable scenes.

"Those who thus apply phrenology find its great advantage, and this in spite of the sneers of the ignorant and presumptuous, who seem to think nothing can be true till believed in by them. The Pope once declared that the world did not turn round; at the same time, that it was turning round, and carrying him and his whole college of cardinals around with it. Men say that phrenology is not true, at the same time that their own heads demonstrate it. I was much amused the other day at a gentleman approaching me with the tone and natural language of combativeness, and attacking me on account of phrenology. Having made up my mind as to its truth, and being at perfect ease on the subject, I did not feel inclined to disturb myself with quarrelling, so I talked as calmly as I do now, yet it was ten minutes before the language of combativeness disappeared. Thus while opposing phrenology, his organization and manner were proofs of its truth."

LECTURE XII.

MODES OF ACTIVITY OF THE FACULTIES.

Any organ whatever may *come into activity* from the mere stimulus of the blood, and consequently involuntarily. It may be inferred, therefore, that each organ has a necessary, natural and virtuous sphere of activity; else would the Creator have formed some organs for the especial purpose of doing wrong. I have before explained to you the effect of temperament. You know, of course, that the *rapidity* of the spontaneous action will much depend on it, and the *power*, on the size of the organ. *Intensity* results from an active temperament, combined with large size. One in whom the lymphatic temperament predominates, will have a slow spontaneous action; the action of the other temperaments will, of course, be stronger.

MODES OF ACTIVITY OF THE PROPENSITIES AND SENTIMENTS.

The faculties of the *Propensities* and *Sentiments* cannot be excited to activity directly by a mere act of the will. We cannot conjure up the emotions of Fear, Compassion, and Veneration, by merely willing to experience them. The feelings may, however, be brought into activity from internal causes: some feel an internal prompting to fight or oppose; some to pursue wealth; some are passionately fond of the constructive arts, without knowing whence, how, or why these feelings came. They spring from the spontaneous activity of the organs by which they are severally manifested, and each organ has a tendency to activity in proportion, cæteris paribus, to its size. From this activity arises the subject of continual thought. One in whom Love of Approbation and Self-Esteem are large, will be fired with ambition, and love to be clothed with authority. I saw a child yesterday, eight years of age, in whom Love of Approbation, Imitation, Individuality and Eventuality are large; and already the chief desire he has is to see his name in print. Insanity is the result of this spontaneous action, when excessive and not controlable by the will. Sometimes one organ is morbidly active, while the others are sane; there have been instances of people requesting to be bound, that they might be prevented from giving way to their strong desire to commit manslaughter. In such cases, to convince the intellect is useless; the aberration depends on cerebral disease: and you might as well attempt to talk gout out of the toe, as to talk disease out of the brain.

In the next place, each faculty may be roused into activity by the *presentment of its appropriate objects.* Thus, Benevolence is roused by a scene of distress; Philoprogenitiveness by the sight of children; Ideality by whatever is beautiful. When we become acquainted with this law, we obtain, to a great extent, the mastery over the activity of the faculties. But the propensities and sentiments may, in the next place, be roused by words which convey such ideas as stimulate them to activity. Thus, the description of a beautiful scene may produce activity in Ideality. This last is, however, the least effective stimulus; to present a scene of distress appeals much more powerfully to Benevolence than to describe one. Suppose a shipwreck be vividly described: it may greatly excite the feelings; but if a shipwreck be witnessed, there can be no doubt of its exciting them ten times more. Sometimes the excitement produced by a powerful external stimulus is such as to disorder the faculties. A gentleman was sailing, in his own small pleasure yacht, down the Clyde, when a sudden flaw of wind came from a gap in the mountains and upset the vessel in which he was, throwing it on its beam-ends. He and his companions held on, in the expectation of assistance; but in half an hour another flaw came, and righted the vessel. They were all saved, and immediately sailed to Belfast to attend a regatta. He said that while in the water, he was not conscious of great perturbation or excitement; the blue and seemingly unfathomable Clyde, lay beneath and around them, smoothly and calmly. On his return, however, he applied to Dr. Combe, on account of a singular malady. Since the accident in the Clyde, he had been subject to sudden fits of fear and apprehension—to starting and perturbation, without any adequate external cause, which was doubtless a diseased condition of the organ of Cautiousness. He was under treatment six or eight months before he got rid of the affection.

" It seems," says David Hume, " an unaccountable pleasure which the spectators of a well-written tragedy receive from sorrow, terror, anxiety, and other passions that are in themselves disagreeable and uneasy. The more they are touched and affected, the more are they delighted with the spectacle. The whole art of the poet is employed in rousing and supporting the compassion and indignation, the anxiety and resentment of his audience. They are pleased in proportion as they are affected, and never are so happy as when they employ tears, sobs and cries to give vent to their sorrow, and relieve their hearts, swollen with the tenderest sympathy and compassion." This enigma is explained by the remarks before made on the activity of the respective faculties, occasioned by the presentation of the appropriate objects.

All happiness consists in the agreeable excitement of our faculties, and activity is the very essence of gratification. Now on the stage, the words and natural language of emotion are so well imitated, as to arouse the feelings with much more energy than words alone could do. In the play of Pizarro, for instance, when the child is introduced, its aspect and situation excite Philoprogenitiveness; its danger arouses Cautiousness, producing fear for its safety. When Rolla saves it, Philoprogenitiveness is delighted and Benevolence gratified. Religious people denounce theatres, but a taste for dramatic representations is founded on the innate faculties, and is no less inherent than a taste for music, sculpture, and painting. If, therefore, the faculties which produce these tastes have been instituted by the Creator, we may be assured that the drama and the fine arts have legitimate, improving and exalting objects, however much any of them may have been hitherto abused. Painting, sculpture and the drama, are mere arts of representation and expression, which may be made subservient either to the animal propensities, or to the moral and intellectual powers. In a painting, a statue or a play, may be represented either a most lascivious and immoral object, tending to excite passions already too strong, or, on the contrary, something having a tendency to strengthen our moral and religious emotions. Happy, indeed, would it be, could we always employ these agents to promote goodness. Our plays, at present, are mostly suited to a barbarous age; but this needs not be the case long. By taking away odium from the name of the theatre, and encouraging it when properly conducted, genius of the highest order would be directed to it, plays would be written in accordance with the highest morality; this course appears to me that of wisdom and virtue, for the theatre will doubtless exist as long as man. Let us hope that some future Shakspeare, aided by the true philosophy of mind, and a knowledge of the natural laws, according to which good and evil are dispensed in the world, will yet teach and illustrate the philosophy of human life with all the power and efficacy which lofty genius can impart.

For their amusements people seek the gratification of their strongest feelings; hence from them may the character of a people be inferred. We have heard the praises of

Grecian and Roman ladies; but when we read of their taking delight in witnessing the combats of beasts with each other and with men, and in witnessing the fights of gladiators, often putting up their thumbs as a signal that the poor wretch that had been wounded for their gratification, should be killed outright to gratify still farther their savage thirst for blood; we say that the Grecians may have carried the fine arts to a wonderful degree of advancement, and that the Romans may have been great in many things; but that in morals they were barbarians; encouraging boastingly what the people of any modern European nation would shrink for shame to be caught witnessing. Their refinement and morality were merely on the surface.

As men advance, they emerge from the propensities and rise into the activity of the sentiments. A gentlemen told me that he recollected the time when prize fighters used to go about in England to exhibit themselves for money, in single combat; and that on one occasion, when in a coffee-house, he sat in the next box to two of them, whom he overheard making arrangements for their ensuing exhibition. They agreed to repel and attack each other with seeming fury for a certain time, and that each alternately should submit to receive a wound in the flesh, not very deep, but sufficient to draw blood. The boxing matches which are still practised are similar gratifications of Combativeness and Destructiveness. While the people found pleasure in such barbarous exhibitions, their general manners were those of barbarians. The criminal law was extremely bloody; in the army and navy, the most cruel punishments were extensively inflicted; prisons were dens of horror and profligacy; the pauper insane were treated worse than wild beasts, and duels were of frequent occurrence. As the moral sentiments incressed in activity, these sports were altogether or partially abolished, and all the other barbarities diminished. In the eastern part of this country there appears to be no amusement of this kind resorted to for the purpose of arousing the propensities; but I saw an account the other day, in one of your newspapers, of a duel fought at Vicksburgh in the presence of a thousand spectators, shots being exchanged at ten in the morning, and again at four in the afternoon. In Ireland, Curran once fought a duel in the presence of ten thousand people. These exhibitions can only be relished where the propensities are very active. I have been told by the manager of a theatre, that when he had no star who could attract a full attendance, he found it most advantageous to present a bloody tragedy or a genteel comedy. In the former case the galleries would be crowded, though the boxes would be almost empty ; in the latter, the boxes would be pretty well occupied, but the galleries almost deserted.

I have said that when an organ is large, its manifestation is powerful. The converse is true; when an organ is small, its manifestation is weak. This observation is of great practical value. In a child-nurse, Conscientiousness could not supply the place of Philoprogenitiveness ; the latter organ being small, every thing is performed as a task, and not with that lively emotion of pleasure which its large development gives. In a sick-nurse, no possible combination of the other organs can compensate for the lack of Benevolence, which is the fountain of kind attentions. If one with Acquisitiveness and the Propensities large, and Conscientiousness small, be placed in an office of trust, the almost certain consequence will be unfaithfulness. The remedy for such evils is to put men into such situations alone, as their organization fits them for, and to keep the man of strong propensities and deficient moral sentiments out of the way of temptation. In this country, as elsewhere, it is necessary to entrust postmasters, clerks, and others, with large sums of money. Now, if Acquisitiveness, Secretiveness, and the other propensities be large, and Conscientiousness deficient, unfaithfulness will be the most probable result. A private banker in England told me that he never employs a clerk without first ascertaining that his Conscientiousness and moral sentiments predominate over the propensities; and that for the ten years he has practised this, he believes he has not lost a farthing. I have followed the same rule, with similar success.

To present to the moral sentiments their appropriate exciting objects, should be the first great aim of education. This is the only true mode to make children act well; precepts may do something, but they are feeble, indeed, compared with example. Would you have your child benevolent, engage it early in acts of kindness, and be yourself kind. Would you excite its veneration, you must yourselves be respectful in your demeanor, treat all with due consideration, and be attentive to the duties of religion. I saw a beautiful example of appropriate training in Philadelphia. A little ragged negro girl went to a door to beg food. The servant gathered some together, and did not present it herself, but called a little child, and permitted it to do so. In performing this act of charity, its countenance beamed with joy and goodness. As I looked upon the scene, it struck me that this would have more effect in training that child to the practice of benevolence, than ten lectures on the subject.

The Propensities and Sentiments have no memory. It is imposible to excite or recall directly, by an act of the will, the feelings or emotions produced by them. For instance, suppose you were insulted last January, and that this aroused passion in you: The intellect recollects the insult, and that you were enraged; but you are not able to call up the rage anew, or to cause the propensities to take on precisely the same condition which they did at the time the insult was offered.

MODES OF ACTIVITY OF THE KNOWING AND REFLECTING FACULTIES.

The Knowing and Reflecting Faculties form ideas and perceive relations; they constitute *will*, and minister to the gratification of the other faculties, which only feel.

The knowing organs may be so deficient as not to perceive their appropriate objects; this has often been the case as regards the organ of colour. When a faculty recognizes an object on presentation, we call this act PERCEPTION; it constitutes the lowest degree of activity of the intellectual faculties. I present this bust; as you perceive it, the faculties of Form, Size, Colour and Individuality are called into activity. The old philosophers treated of perception as a distinct faculty; but this it obviously is not, inasmuch as the same individual that perceives some things vividly, perceives others faintly, or not at all. We have seen that Milne has a strong perception of form, but is almost destitute of the power of perceiving colours. Mr. Ferguson was unable to perceive the perspective of drawings. I am unable to perform any but the most simple calculations. Some, again, cannot comprehend reasoning, however clearly it may be stated. I have seen much distress occasioned by placing persons in situations for which their organization did not adapt them. A servant, for instance, who has Order deficient, is scolded continually, though she evidently does her best; but after she has arranged every thing in such way as to please herself, one in whom the organ is large, will see confusion.

The next degree of activity is CONCEPTION. I presented this bust, and asked you to examine it; I now put it behind me, and ask what you recollect of it. Some of you cannot tell any thing about its form and features—cannot form an ideal image of it; others can do this. The calling up in the mind that which is absent, is called conception. One in whom locality is small can perceive the direction of things from each other, but cannot call up this direction when absent; he in whom it is large can sit in his room and recall vividly the various scenes through which he has passed. Some are able to perceive melody, but not to conceive it: they may enjoy music when they hear it, but cannot for their lives, recall notes which have ceased to strike the ear; every thing is wiped out, as with a sponge. The same is true of the reflective faculties. Some can perceive a chain of reasoning when presented to them, and the correctness of the conclusion to which it leads, who are utterly unable to recall a single link of that chain. They complain of bad memory; but these very persons may have an excellent memory for facts and events. Small organs of Causality are the cause of their being unable to recall a chain of reasoning.

IMAGINATION is the highest degree of a faculty's activity. Suppose you hear the notes of a tune: that is perception. Suppose you are able, when the music is not sounding in your ears, to call up those notes in your mind as you heard them: that is conception. But when the activity of Tune is so great that it becomes a well-spring of new combinations—that music arises in the mind uncalled for, and pours through and haunts it in spite even of efforts to get rid of the intruder, this constitutes imagination. I may mention, as an instance of this spontaneous activity, an anecdote of a minister of Scotland, a friend of Dr. Thomson, who related to me the circumstance. He got the tune of Maggie Lawder into his head one Sunday morning, and could in no way get rid of it; at which he was very uneasy, as he had to preach a sermon that forenoon. At last he went to the end of his glebe, a distance which secured him from being heard, and sung it out at the top of his voice all the excitement abated.

You will see, according to this, that a person may have great imagination one way, who has extremely little in another. If Form be very large, he may have vivid imaginaings of objects related to that organ, and be able to delineate them with fidelity; but if Colouring be deficient, he may at the same time be a most wretched colourist. Imagination, then, is impassioned conception;—conception, however, in new combinations.

DREAMING arises from the involuntary action of some of the faculties while others are asleep. It is a law of the physical organs, that if they be kept in excessive activity, that activity will not at once subside; blood continues to rush into them, and the nervous excitement to glow. This is true of the organs of the brain. Such as have been over-exercised will, after the rest have gone to sleep, keep dreaming and dreaming on the subject of the day, as though they could not find repose. On the other hand, when not sufficiently exercised, the cerebral organs seem during sleep, to take on spontaneous activity, and to disport themselves. Dreams are generally the result either of the continued activity of those organs which have been over-excited, or the spontaneous activity of those which have been unemployed. When the functions have been equally and sufficiently exercised, but not over-tasked, undisturbed and perfect repose is generally the result.

Absolute wakefulness is often occasioned by too intense cerebral activity. This is illustrated by the following incident: The Rev. Mr. Bedford, of Bath, told me that before he knew phrenology, it was his practice to set apart one day a week in his school, for the recitation of all the Greek grammar which the boys under his charge had previously learned, and to stimulate them to the utmost. The morning after one recitation-day, he was told that a boy was feverish, and unfit to rise. He went to inquire the cause. "Oh, sir," said the boy, "I could not sleep all night for the Greek grammar." "But why," said Mr. Bedford, "did you not blow out the candle, and shut your eyes?" "I did, sir," said the boy, "but for all that, I saw the counterpane and walls, and every thing, covered with Greek grammar all the night." Here you see Language and Form excited to an extent which should never be allowed in education.

Mr. G., architect, in Bath, presented plans for the new House of Commons as a competitor; 400 apartments needed to be provided for. The mental labour to arrange these in suitable relations to the windows in the external elevations, to convenience within, and to the stairs and passages, was immense. On going to bed, he continued to go up stairs and down stairs, and along passages, and into rooms innumerable; so that his night's fatigue became almost as great as his day's labour.

I find, too, that dreams generally result from the activity of the strongest organs. One in whom Tune is large, will frequently dream of hearing music; one in whom it is very small will never do so; those in whom Number is large, will often dream of performing calculations; in myself it is deficient, and I never dreamt of any such thing.* Some believe in dreams as forewarnings, because many things are dreamed of which seem to prefigure certain actions afterward achieved or committed. The following is offered as a conjectural explanation of such coincidences: our most vivid dreams, most remarkable achievements, and most unfortunate aberrations, all arise, as a general rule, from our largest organs. A curious illustration of this principle occurred in a man named Scott, a poacher, who was executed at Jedburgh in 1823. Some years before the fatal event, he dreamed that he had committed a murder; he was greatly impressed with the idea, and frequently spoke of it as ominous. One day he met two Irishmen on the road; they were all a little excited with whiskey, and a quarrel ensued, which terminated in a fight between him and one of them. They parted, however; but Scott had not proceeded half a mile, when his passion became again violently excited with the thought that he had not had satisfactory revenge. Accordingly, he turned in pursuit of the Irishman; came up with him, seized a stick, struck him fiercely on the head and killed him on the spot. In the head of Scott, the organ of Destructiveness was large, and he was prone to outrage and violence. This activity of the organ might take place during sleep, inspire his mind with destructive feelings, and the dream of murder be the consequence. From the great natural strength of the propensity, he probably felt, when awake, an inward tendency to this crime; joining this and the dream together, we can easily account for the strong impression left by the latter on his mind.

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* Many facts might be adduced in support of the principle here laid down. Pitt used to rehearse his speeches during sleep. Coleridge in sleep composed the brilliant poem commencing

"In Xanadu did Kubla Khan,
A stately pleasure dome decree;
Where Alph, the sacred river, ran
Through caverns measureless to man,
Down to a sunless sea."

I know a gentleman in whom Benevolence, Comparison and Language are all large, who lately dreamed of making a speech on the Emancipation of Slavery in the British dominions. The last sentence was a striking exemplification of the combined activity of the above faculties.—"The rays of British benevolence beamed upon their fetters, till, they melted and dropped from their limbs."

Memory. Every intellectual faculty has its own memory. Suppose I call to mind that I saw a man in Broadway yesterday at twelve o'clock: Form, Size, Colour and Individuality are employed in recollecting his person, Locality in recollecting the place, and Time in recollecting the hour. The difference between Memory and Conception is very slight; it appears to be this: In remembering things, we call up the impressions with a conviction of their previous existence, and a reference to the time, place and circumstances of their occurrence; whereas, in Conception, the ideas come up without reference to these particulars. Suppose I recollect a certain piece of music, but not the time, place and circumstances in which I heard it: this is Conception. If I recollect it, and also that I heard it at the National Theatre, and that Mr. Wilson sung it, this is Memory. The difference in the power of recollecting different properties of bodies, classes of phenomena, or facts, is referable to the different relative size and activity of the various organs; when Colour is large and Form small, the first will be remembered much more readily and vividly than the last.

There are some differences in regard to Memory, which it is difficult to explain. Sir Walter Scott, for instance, was remarkable for the *retentiveness* of his memory; what he once learned, he is said never to have forgotten. An instance of this is mentioned by Lockhart: Hogg went to Sir Walter one day, in great trouble concerning a poem which he had lost. Sir Walter said he thought he could assist him; and though he had heard it but once, he dictated the poem, which its author himself had forgotten. For this quality we have no external sign; it must, however, depend on some condition of the brain.

To recall impressions, it seems necessary that the brain should be in the state in which it was at the time the impressions were made. Dr. Abel of Cork related to me an instance of an Irish porter who was sent to deliver a parcel. He got drunk, and delivered it at the wrong place, and when sober could not remember where he had delivered it; but the next time he got drunk he remembered, and went to the place and got it back.

DOUBLE CONSCIOUSNESS, as it is called—but more properly *double personality* or *divided consciousness*—that is, an entire obliteration of all the previously existing ideas, and a commencing to learn anew as a child; and then an entire obliteration of all the newly acquired knowledge, and a return to the previously existing ideas, the alternations being more or less numerous, is a phenomenon which we cannot yet explain. Dr. Dyce reported the occurrence of these phenomena in a young woman of sixteen years of age. I saw a similar case myself in May, 1838, at Birmingham—that of a young woman also sixteen years of age, who had been similarly affected for the three previous years.

I notice, in the next place, JUDGMENT. Now on what does this depend? On a favourable development of all the faculties. When a man possesses such a combination, each faculty throws in its own suggestion, and there is that harmonious balance of activity by which all the faculties are brought to perform their functions in the best manner. If any one be very small, there will be a defect in the judgment, in regard to feelings and things to which it is related. If any be excessively large there will be exaggerated emotion or perception in that department. A man in whom all are favourably developed, acts under the control of the moral sentiments and intellect, but he has the well-spring of all the faculties to a proper degree.

Sound judgment is feeling rightly and perceiving correctly. The reflective faculties are the judges, but they depend on the other faculties for correct data. Hence a man may have a high development of the reflecting organs, and yet in a certain sense, be a man of bad judgment. We have an instance of this in Lord Bacon.

COMMON SENSE is said to be the rarest of all sense. This is true; and the reason is, that for one man who has a good balance of the regions, the moral sentiments predominating, ten have a large development of particular groups of organs. We have men of high intellectual powers, who are lacking in sound judgment: of high genius, who are practical fools. I have often heard it discussed in my own country, and sometimes in this, whether WASHINGTON was really a great man, seeing that he did not in any particular direction show very extraordinary power. Now I have long been accustomed to adduce him as an illustration of that harmonious development which gives sound judgment, sagacity, and practical good sense. In what I now say, I appeal not to your national pride, as I have said the same things in my own country for years. Washington was one of the greatest men that ever lived. His temperament seems to have been sanguine bilious; his head large and well balanced in every part—the moral sentiments and intellect reigning supreme. He had a constancy which no difficulties could overcome, an honesty of purpose and ardour of patriotism which no temptation could swerve nor opposition subdue. He always regarded his country before himself; in him there was no quality of mind deficient, no quality in excess; no false lights, and no deficient lights. He therefore gave to every thing its due weight and no more. He was dignified, courteous, and just; brave, cautious, politic, quick to perceive, and prompt to judge; always acting at the right time, and in the right manner. Those who say that Washington was not a great man, can merely mean that he displayed no one quality in excess—that he played off no corruscations; but he had that sterling worth—that daily beauty in the life—that force of character—that grandeur and elevation of the whole man, which render him far more great and estimable, in my opinion, than the poet, the painter, or the orator.

GOOD TASTE, too, results from equable development. It is, in fact, sound judgment in matters which do not rise to the importance of morals. Bad taste arises from the excessive manifestation of one or more faculties. Thus the scene in Don Juan, in which Juan and his companions are represented as devouring his tutor, is a predominating and disgusting manifestation of Destructiveness, and is consequently execrable in point of taste.

LECTURE XIII.

VARIETIES OF DISPOSITIONS AND TALENTS.

I NOW come to the exposition of the effects of combination or grouping; and in the first place I may observe that the moral faculties and intellect are intended to govern the propensities. This is evident from the fact that man derives the highest enjoyment from this arrangement, and that when the propensities solicit indulgence of which the sentiments do not approve, and we yield to their solicitations, we feel that we have done wrong—that we have sinned. The various talents of men depend on the intellectual faculties; their dispositions on the propensities and moral sentiments. I shall first treat of VARIETIES OF TALENTS; and in doing so, shall commence with the perceptive faculties, and proceed upward.

The talent for observation and practical business depends on Individuality, Eventuality and Comparison, or the middle line of the forehead. The head of JOSEPH HUME is very large, the sentiments being large, the propensities considerable, combined with great Firmness and Self-Esteem, and great intellectual development in this region. Wit, Ideality and Causality are all deficient. The combination rendered him indomitable—firm as a rock, though surrounded for years by a vast majority of opponents. Indeed, for a long time, he stood almost alone in Parliament in his schemes of financial reform; but his intellect enabled him to become so completely master of the financial details of a great empire, and to expose abuses with such clearness and force, that though he was outvoted, he shamed ministers from their extravagance, and forced them to economy and a better financial system. You might, perhaps, from the power he has wielded, be led to expect such a head as this of Franklin; but Hume is no great logician or profound political economist.

In Mr. Dunn's head you see large Individuality, Form, Size and Locality; and this is the combination for forming the surveyor. Weight, also, is necessary to form the engineer; if Calculation and Order be added, so much the better. In Stevenson, the constructor of railroads and locomotive engines, you find the above combination without large reflective faculties. A gentleman, who has attended this class, told me that he saw a man, on one of the railroads of this country, with a very large development of this region. He asked the head engineer concerning him, and was told that he had been a common Irish labourer; but was found 'to have such an eye,' as they call it, for running levels, that he was taken from his laborious employment, and set over the men.

Another combination produces the naturalist. When you read of Sir James Smith, the botanist, who possessed such an extraordinary knowledge of plants, or rather of the form and nomenclature of plants, you might be led to expect a great forehead; but the phrenologist looks only for the necessary organs. In him we find only large Individuality, Form and Language.

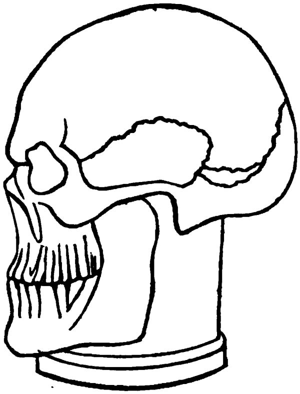
Another combination, with a certain addition, constitutes the artist. You find in this cast the region before mentioned large, giving accuracy of observation. Then you have large Constructiveness, large Ideality, considerable Causality and Imitation. It is the head of Mr. Joseph, and possesses a combination fitting that gentleman for the higher departments of his art. Imitation and Ideality give expression, beauty and finish; and Causality an insight into character. Without the operation of these faculties, a statue would be a dead-looking form. This head of Canova is like that of Mr. Joseph in these particulars, and, looking at the front, it would seem not to be very superior; yet we find the stamp of superior genius on all Canova's productions. There is an air of inspiration thrown over them—a speaking mind beaming from every production of this great master, which Joseph could not reach; and why this? Attend to the length of the anterior lobe, as made known by the rule I before gave you, and the explanation is obvious; the intellectual organs of the Italian sculptor are much larger than Joseph's. It is impossible to see any production of Canova's without observing in it a peculiar charm. On entering the studio of a young artist, in Scotland, my attention was immediately drawn from the works about me to the cast of an eagle which lay upon the floor, but which beamed forth so full of life, expression, and mind, that it spoke out from the dust even, in a way not to be misunderstood. I asked the artist whose beautiful production it was that seemed to be treated with such neglect? "That," said he, "is Canova's eagle." This explained all. You never see such expression except in the works of the highest order of genius, accompanied by great size in the organs as well as a very active temperament.

Then we have Haydon, the historical painter of England, who has been engaged in the highest walks of his art. There are, however, two defects in his organization: Individuality and Comparison are both minus; and in his paintings there is admirable vigour of conception, but he does not come up to his conceptions; there is a haziness, a want of filling up, of that intelligent, speaking power of the mind to which I before alluded. This is the head of Sir David Wilkie, who has never attempted as high departments of the art as Haydon. He has less Ideality, but he has large intellect, including good Individuality and Eventuality. He draws his subjects from a great range of observation, and is very successful in giving substance, reality and finish to his conceptions.

We have here the heads of three orators, all greatly distinguished in their day. Perhaps there is no subject on which men go so much astray as that of oratory; the requisite powers are rated altogether too highly. This is the mask of Curran. You perceive in it Individuality moderate; Eventuality and Comparison large. It is an apt, ready head, just fitted for observation, discrimination and illustration. Many are surprised, on reading his speeches, how they could be so effective as they really were. Curran caught and expressed the people's feelings; he addressed them as they wished to be addressed: and the effect cannot now be appreciated or put upon paper. This is the head of Pitt. Here we have the same combination, with larger Individuality, great Firmness and Self-Esteem. He had vast knowledge of details, great readiness of speech, and plausibility of manner; but his Causality is poor, and we vainly look in his speeches and actions for the recognition of any great leading principles. Policy, narrow policy alone can be detected. This is the head of Dr. Chalmers, which as you perceive is superior to the two last. Causality is larger, and he possesses great Ideality, Comparison, and perceptive organs. He deals with principles to a much greater extent than Pitt and Curran; but while seeking principles, he is not always so fortunate as to find true ones, or to be consistent in their application.

Here we see a higher order of intellect. The observing faculties very large, giving great power of mastering details. The reflecting faculties large, giving astonishing depth of penetration. There is also large Secretiveness and Wit, giving a great tendency to humour and playfulness of expression. This, then, is a head in which the observing faculties give definiteness of view, and the reflective faculties profundity as well as acuteness of thought; and we all know that Dr. Franklin has produced more effect here, and in Europe, than any other American. I cannot go to any of your Atlantic cities without finding that his spirit is abiding with you—that his wisdom is operating to the present hour. His was a mind the emanations of which will live for ever. Franklin, however, was deficient in one faculty, Eventuality: and his Ideality was but moderate. He never had the power of continuous writing or speaking. He had little brilliancy, fire or readiness; his productions consisted generally of a short essay, containing some profound principle illustrated by an anecdote, or a series of propositions and sentiments clinched by Casuality. A speech from him of ten minutes long was considered unusual.

COMBINATIONS OF THE PROPENSITIES AND SENTIMENTS.



Heads may be divided into three classes:

1. Such as have the moral sentiments and intellect in preponderance; as in this skull of Spurzheim.
2. Such as have the propensities, moral sentiments and intellect, nearly in equilibrium.
3. Such as have the propensities in preponderance.

On looking at this head, you see large moral sentiments, large intellectual faculties, and full propensities. A person with such a combination has courage to meet danger, Destructiveness enabling him to witness scenes of suffering without being unnerved, and giving weight to his command by making the refractory feel that it is not safe to offend; Self-Esteem and Firmness giving importance, consistency and perseverance. But, as the moral sentiments are very large, you will never find Combativeness degenerate into a contentious, quarrelsome spirit, Destructiveness into cruelty, Acquisitiveness into an infringement of others' rights, Self-Esteem into haughty superciliousness, or Firmness into wayward obstinacy. The intellectual region is large both in the lower and upper part, giving the power of mastering details and drawing conclusions. This is one of the highest class of heads. Put such a one in any situation you please, it should be found to come out honourably and reputably. This is the head of Captain Parry, who was placed in many trying difficulties, and always acquitted himself in a masterly manner.

This is the head of Burke; it belongs to the same class, and now, when Curran, Sheridan and Pitt have sunk into oblivion, *so far as the moral or political influence* of their writings or speeches is concerned, Burke's writings are resorted to as a fountain of political wisdom. We find there profound maxims of policy, government and morals, which will cause his name to be remembered through all time.

On looking at this, the head of Rammohun Roy, you find Amativeness, Love of Approbation, and Combativeness large. You find a coronal region of the first class, except that Veneration and Hope are not so well developed as Benevolence and Conscientiousness; you find, too, an intellectual region of great size, and great Firmness and Self-Esteem. Rammohun Roy was a Hindoo of noble family. His manners were polite and dignified, and toward the fair sex he manifested unvarying and refined courtesy. Brought up in the Hindoo religion, he was early dissatisfied with its doctrines and observances, and drew upon himself the enmity of the brahmins, and the opposition of his own family, by the boldness with which he called in question the validity of the idolatrous system of the Hindoos, and the burning of widows. Throwing off the superstitious creed of his fathers, he studied the Bible, and became convinced of the truth of the Christian religion. That he might the more successfully pursue his studies, he learned, almost without assistance, the Latin, Greek and Hebrew languages—pursuing his investigations from one point to another, till he finally settled down into the moral teachings of Christianity, and the unity of God. He tried to convert his countrymen, but found them incapable altogether of appreciating the law of evidence. Did he describe to them the miracles of Christ, they told him of the still greater miracles which their books recorded. Did he tell them of mysteries, their sacred books contained still profounder mysteries; but the moral teachings of Christianity were incomparably superiour to those of the Hindoo books, and he determined to draw the attention of his countrymen to these. Accordingly he collated and classified all the sayings of Christ, and published them in a book called the "Precepts of Jesus." I have read the work, and an admirable one it is. Now all this is in exact accordance with his developments. Had his Veneration been as large as his other moral sentiments, I am of opinion that he would not have been able to throw off the superstitions in which he had been educated. When studying the Christian religion, he did it with a zeal and research to be expected from his large brain and great intellect; then, in exact accordance with his organization, he settled down into the moral precepts, as the sum and substance of Christianity.

This is the head of the Rev. Dr. Andrew Thomson. You see a very considerable coronal region, with well developed propensities; you see Individuality, Eventuality and Comparison large, with only moderate Causality. Here we should have more acuteness, readiness and power of illustration, than profundity or comprehensiveness of intellect; and this was true of Dr. Thomson. He was generally on the side of justice and liberality; he fought many battles for emancipation, and his large propensities infused into his advocacy great power and energy. But though ready and clear, he was not profound. He disliked, as he told me, to open a meeting; he hardly knew what to say; but if his Combativeness and Destructiveness were aroused by the advocacy of what he thought injustice or illiberality, he would, in answer, rise to great eloquence.

This is the head of R. B. Sheridan. You perceive that the propensities are decidedly large, the coronal region scarcely more than moderate, with a long anterior lobe, developed greatly in the region of Individuality, Eventuality, and Comparison, but moderate in the region of Causality, and full in the region of Wit. And what was his character? He was profligate, reckless, and showed no sense of justice. His passions were strong, his nature vindictive. In his youth he fought one of the most brutal duels on record. His Self-Esteem and propensities being large, and having great depth in the middle region of the anterior lobe, whatever ideas he had, he promulgated with great vividness and force. He possessed great powers of description and illustration, made exciting speeches, wrote sparkling plays, and was noted for sharp sayings. He soon rose to distinction, and was put into a situation with a good salary. His character at this time stood high; but on losing his situation from a change of Ministry, his reckless extravagance ran him into debt; he followed any device to get money; he swindled tradesmen—he swindled his friends, till scarcely a friend remained attached to him. George IV. has been blamed for deserting Sheridan; but Moore has clearly proved that no man could be the friend of Sheridan without consenting to be his dupe. Sheridan is celebrated for witty sayings; but Moore has shown that many of these sayings were not his own; he used to keep what might be called a day-book and ledger, in which he entered any good observation or retort which he heard, and repeated it, in a somewhat altered form, the first appropriate opportunity which offered. He was, in fact, a great repository of other men's wit, and added much of his own. In his play of 'The School for Scandal,' the dialogue abounds in wit; but this did not arise from the fervour of composition; his witticisms and jokes were collected from time to time, and noted on the margin, till he had an opportunity of weaving them into the text. This play is brilliant and witty, but it appears to me disgustingly immoral. Directly after the peace of Amiens, on going to the House of Commons, he overtook a country gentleman of his acquaintance, and asked him his opinion of the peace? "Why," said he, "I say as every body else: it is a peace of which England may be glad, but of which nobody can be proud." When he arrived at the House, the peace was under discussion. Sheridan got up, "Mr. Speaker," said he, "this peace may be characterized in a single sentence: It is one of which England may be glad, but of which nobody can be proud." The effect was electric; it expressed so happily the general opinion, that it went through the country, and was lauded for its profundity and discrimination. Richard Brinsley Sheridan was a man of great brilliancy, little depth, and less morality; of strong passions and great selfishness; and after a career of extensive notoriety, he ended a shipwreck; there being nothing in his writings which will bear his name with honour to future ages.

Here is the head of the Scottish poet Burns. This cast I know to be authentic; it being presented to me by his wife's executors, who took a mould of his skull at the time she was interred. Now, you perceive in this head large Amativeness, very large Philoprogenitiveness, large Adhesiveness, very large Combativeness and Destructiveness, and large Alimentiveness. Passing to the coronal region, we find that to be largely developed; large Benevolence, large Imitation, large Ideality, considerable Wonder, and Firmness and Conscientiousness full, being somewhat less than the preceding. His anterior lobe you perceive to have been long, his temperament was one giving great energy and endurance—the bilious nervous. No one ever drew the character of Burns more faithfully than he himself, in that pathetic effusion

THE BARD'S EPITAPH.

"Is there a whim-inspired fool,
Owre fast for thought, owre hot for rule,
Owre blate to seek, owre proud to snool,
Let him draw near;
And owre this grassy heap sing dool,
And drap a tear.

Is there a bard of rustic song,
Wha, noteless, steals the crowd among
That weekly this area throng,
Oh, pass not by!
But, with a frater feeling strong,
Here heave a sigh.

Is there a man, whose judgment clear,
Can others teach the course to steer,
Yet runs himself, life's mad career,
Wild as the wave,
Here pause, and, through the starting tear
Survey this grave.

The poor inhabitant below
Was quick to learn, and wise to know,
And keenly felt the friendly glow
And softer flame;
But thoughtless follies laid him low,
And stained his name.

Reader! attend: whether thy soul
Soars fancy's flights beyond the pole,
Or darkling grubs this earthly hole
In low pursuit,
Know, prudent, cautious self-control
Is wisdom's root."

His head cannot better be described than by these stanzas. Here we have his large propensities, "owre fast for thought, owre hot for rule," running "life's mad career wild as the wave;" his large Love of Approbation and Self-Esteem, "owre blate (too modest) to seek, owre proud to snool;" the large domestic faculties, which "keenly felt the friendly glow and softer flame." We have his large intellectual and moral faculties, which "can others teach the course to steer,"—"quick to learn and wise to know." His Benevolence is manifested in the warning contained in his concluding stanza: "Know, prudent, cautious self-control is wisdom's root." He in this line indicates, too, his consciousness of that deficiency of Firmness which his skull indicates. It is much to be regretted that his circumstances were what they were. That they were no better, is felt by us to be a disgrace to Scotland. No situation, indeed, could be more unfortunately selected for him than that of an exciseman. He had to visit distilleries and breweries, to follow smugglers through the wilder parts of the country, being thus exposed to all the temptations of boon companionship, spirits, and irregular hours. Had he been favourably situated, there was an inherent morality in his mental constitution which would probably have saved him from aberrations, and rendered his reputation far other than it is. And never let it be forgotten that Robert Burns, with a salary of seventy pounds a year, harassed and straitened as he was, and wild as he is said to have been, died, after three months' sickness, as his widow herself told me, without being in debt a single farthing. There is no head in our whole collection more touching and interesting than this of Burns, who won by the beauty of his poetry and the independence of his character, an imperishable name.

We have here a head in which the propensities are large, but still the moral sentiments are considerable, and there is a fair intellect. The phrenologist would say at once that the conduct of the individual would depend much on external circumstances. If you apply stimulus to the propensities, he would probably yield to evil influences; if to the moral sentiments, you would form a virtuous and useful man. Like a balance hung in the centre, you may turn him either way with little trouble. A man possessing such an organization cannot, therefore, be depended on, except where you can answer for the external circumstances. The man's name was Maxwell; in early life he was a bailiff or civil officer in the town of Ayr in Scotland, and during the time he held office his character was exemplary. He afterward became a soldier, and while under military discipline his conduct was irreproachable. After leaving the army, and becoming entirely free from control, he commenced weaving for a living; but finding it very difficult to get employment and support his family, he threw up his business and joined a band of robbers, of which he became chief; he was finally arrested, and hanged. His conduct when in prison was becoming; nothing seemed to surprise him so much as the difference between his conduct in the former and latter part of his life. "Oh, sir," said he " how little can we know of futurity! When I was in the office of the magistrate of Ayr, I no more thought of coming to this end, than of becoming King of England." Then we have heads such as this of Hare, belonging to the third class. The moral region is extremely shallow, the intellect weak, and the propensities very large. In such a head the balance is cast entirely in favour of the propensities.

NATIONAL SKULLS.

Ireland is inhabited by various races of men. To the North, they are much like the lowland Scotch, a mixture of the German, Saxon and Gallic races; but in the South the Celtic race prevails. They have great Combativeness, and an acute intellect; but the moral sentiments are not so large; indeed, they will need training for centuries before they can equal the Saxon race. I have before remarked that size, other things being equal, is a measure of power. Nothing is more striking than this, in an examination of national skulls. Here is the skull of a *New-Zealander*, a fair specimen of the race. You see that it is much larger than the Hindoo head. There is, you perceive large Combativeness and Destructiveness, a rather small coronal region, but a well-developed intellect. Now, while ninety millions of Hindoos are kept in subjection by forty thousand Englishmen, the comparative handful of New-Zealanders have never allowed the Europeans to overcome them.

This is the head of a *Chinese;* here you see a considerable intellectual, and a moderate coronal region. The head, as you see, is larger than the Hindoo head. It is remarkable that this people seem to have remained stationary for two thousand years.

I have noticed the great ease with which the English keep the Hindoos in subjection. There is one nation of India which has given them much more trouble; and, though they have been able to overcome it, the loss has been ten times as great as when fighting with the former. I refer to the *Burmese;* and it is well worthy of remark; that in their heads Combativeness and Destructiveness are larger than in the Hindoos, and the intellect is very fairly developed. Here is a skull from Hindostan differing much from that of the ordinary Hindoo. It possesses much more Combativeness and Destructiveness, with less Benevolence and Conscientiousness. This is a specimen of the *Thugs* of India, a race of assassins and robbers, with priests among them, who give them their blessing when they go on their expeditions. Their plan is to ingratiate themselves with a traveller, and accompany him till they arrive at a convenient spot, and then to murder and rob, but always to murder him. The British have lately taken up the matter. They hanged twenty-seven of them on one morning; and have gone on exterminating them with such energy, that the practice is now pretty much abandoned.

The *Negro head* is one of exceeding interest. Of the Negroes there are many varieties. The skull which I hold in my hand is small, the intellectual and moral faculties being little developed. Of this form, however, I have seen very few. The one which I now exhibit may be considered as a fair sample of the generality of Negro skulls. It is much longer, you perceive than it is broad; Combativeness and Destructiveness are large but not predominant. The coronal region is well developed; Veneration is the the largest organ, Benevolence the next, and Conscientiousness the next. There is a very fair intellectual region. Here is another. This was presented to me by Dr. Gibson of Philadelphia. There is the same general development, but Veneration is only moderate; this, however, is not generally the case. When I went to Washington I paid great attention to this subject, and can state, as the result of careful and extensive observation, that this better form of head is by far the most prevalent, in such of the few states as I have visited. I made another observation of very great interest, namely: that the Negroes of the Free States have, for the most part, better organized heads, that those in the few of the Slave States which I have seen; those of Philadelphia, for instance, are superior to those of Washington. The cause of this, observation does not enable me to assign. It may arise from the former having descended from a superior stock; but it most probably arises from their freedom having brought the moral and intellectual faculties into more active employment, which has produced a gradual improvement of the organs.

When we compare the heads of the Negroes with those of the North American Indians, we find a key to their respective conditions. The Indian has more Destructiveness, less Cautiousness, less Benevolence, and about the same Veneration. His intellect is not so good, but his Self-Esteem and firmness larger; and it appears to me that he has retained his freedom by being the proud, indomitable, and destructive Savage which such a combination indicates. He has disputed every inch of ground; he has fought the European; has laid in wait for him; has harassed and slain him. Had the Negroes possessed a similar organization, to make useful slaves of them would have been impossible; but they are of a superior, of a gentler nature; both the intellectual and moral faculties are of a higher order. They are able to appreciate the superior moral and intellectual powers of the European race, and are content in some measure to live under their guidance. The Indian, on the contrary, has refused to profit, to any great extent, by the arts or literature of the European, and has always preferred death to servitude.

There are, however, great differences between Indian heads. This is a skull from Dr. Morton's collection, of a decidedly superior capacity; and the tribe of which it is a sample were, I am told, most formidable enemies. In these, also, Self-Esteem, and Firmness are very large. Dr. Morton of Philadelphia, has upwards of two hundred heads of North American Indians, which I examined. I can therefore speak decidedly on the differences which exist; but still the most general form is that which I have described. There is a nation of Indians called Flat Heads, from a custom which is prevalent among them of compressing their heads in infancy. I saw one of them to-day. Their skulls show a miserable development of the upper region of the forehead, but with fair observing organs in the lower ridge. Secretiveness, Acquisitiveness and Love of Approbation are very large. It is not yet determined whether the brain is prevented from growing, or caused to grow in a different direction; the Indian whom I conversed with seemed as intelligent as others of the same class whose heads have not been thus compressed. It would be well if the brain could be examined, to ascertain the structure of the various convolutions.

MORAL RESPONSIBILITY.

I shall now consider the question of Moral responsibility. *Will*, we regard as constituted by the intellectual faculties.

It is very often confounded with the manifestation of the affective faculties—that desire which overcomes the others receiving this appellation. Firmness gives determination, and this is frequently called Will: it would be just as proper to say that an ass or a mule manifests Will strongly when it refuses to move, placing its fore feet forward and its hind feet backward in the attitude of perfect stubbornness; whereas it merely manifests Firmness in the highest degree. Will is that mental operation which appreciates the desires and chooses among them. Suppose I feel very indignant on account of an injury received, and a strong desire to wreak vengeance; but I see the consequence and recognise the superiority of the moral sentiments. The intellect says, "Do not strike"—and the hand is powerless; for by an admirable provision the nerves of motion are under the control of the intellectual organs; these being connected, as before explained, with the anterior or motory tract of the spinal marrow. Will, then, is proportionate to the intellect. An idiot has no Will. Such a man as Napoleon has a tremendous Will, and is able to subject the Will of others to his own.

I have called your attention to three great classes, into which men may be grouped according to their organization. These three classes are distinctly recognized in the New Testament. We find in the thirteenth chapter of Matthew, the parable of the sower who went forth to sow: and 'some seed fell upon stony places where they had not much earth,'—moral sentiment and intellectual faculties very small,—'and because they had no root they withered away,'—such heads as this of Mac Innis, the murderer—'Some fell among thorns, and the thorns sprang up and choked them,'—considerable moral development, but large propensities, as in the skull of Maxwell. We are not told that there was deficient soil, as in the former case, but that though the seed was productive, the thorns sprang up and destroyed the produce. 'But others fell upon good ground, and brought forth fruit, some a hundred fold, some sixty fold, some thirty fold.' Here we have moral region predominating over the propensities, the good ground obviously referring to good moral and intellectual faculties. And mark, we are not told that the quantity of produce was the same in all cases, but that some brought forth *a hundred fold*, some *sixty fold*, some *thirty fold*.

The same differences are recognized in the scriptures with regard to talents, in the twenty-fifth chapter of Matthew; "For the kingdom of heaven is as a man travelling into a far country, who called his own servants and delivered unto them his goods; and unto one he gave *five* talents, to another *two*, and to another *one*—to every man according to his several ability. After a long time the lord of those servants cometh and reckoneth with them. And so he that had received five talents came and brought other five talents, saying, Lord, thou deliveredst unto me five talents; behold, I have gained besides them five talents more. His lord said unto him, Well done, thou good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many things; enter thou into the joy of thy lord. He also that had received two talents, came, and said, Lord, thou deliveredst unto me two talents; behold, I have gained two other talents besides them;"—mark that he receives precisely the same answer as he who had gained five talents: "His lord said unto him, Well done, good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many things; enter thou into the joy of thy lord." When he who had received but one talent said that he had hid it in the earth instead of using it to the best of his ability, "his lord answered and said unto him thou wicked and slothful servant." We find it here clearly inculcated that men are answerable only for the talents which are committed to their charge. Occasionally we meet with a human being who has not even one talent.

This leads me to remark, that the award is not according to the amount of the result, but according to the proportion between the result and ability. In short, where much is given, much is required, and where little is given, little is required. It follows, of course, that persons of the first class of organization are subject to the highest responsibility, those of the second class to less, and those of the third class to the least of all: inasmuch as in the first the moral faculties predominate; in the second the propensities are so large as to impel them continually to that course which they know to be wrong; in the third the propensities so decidedly predominate, that, if allowed to go loose in society, they will as certainly go wrong as that the sun will rise.

Under these circumstances, what are we to make of the responsibility of man to man?—for I speak not of the responsibility of man to God: that is a subject which I think better left to the theologians. So far as we are concerned, we should all do better by being careful to make our own conduct accord with the divine precepts, than by busying ourselves about the judgment God will pass upon our neighbours.

In men of the first class of heads, responsibility is complete; they are without the shadow of an excuse for doing wrong; and, on looking through society, we find that men of this class of minds, hold the substantial power and wealth of a country: they constitute the judges, the rulers, the leading men. Now it appears to me, that these individuals have not, generally speaking, any adequate notion of their great responsibility. Their duty it is to lead the others into the right path, to set them a worthy example, to provide them with appropriate facilities of education, to place before them every inducement to virtue, and remove from them, as far as possible, every allurement to vice. By these means would the character of the second class be elevated, their propensities repressed, and the higher sentiments brought into combined and energetic habits of activity.

We now come to the third class, in which the intellect and moral sentiments are so small, and the propensities so large, that their tendency is almost irresistibly toward evil. They constitute not one thousandth, perhaps not a two-thousandth part of the community; but, from the fearful predominance of their animal feelings, they are capable of immense mischief. I say, unhesitatingly, that these should be physically restrained. They should be considered as morally insane, treated as moral patients, and not allowed to run at large in a state of society in which intoxicating liquors are easily procured, in which property is exposed to their depredations, and life to their furious passions. It is nonsense to say that they have their constitutional rights and should be allowed to go free; they have no more right to go free than mad dogs. When a cow is addicted to violence a board is put upon its horns to give warning of danger. Phrenology recognizes men before they have committed their depredations and their murders, as certainly as the cow is recognized by the board. When phrenology shall obtain due consideration, such men will not be sent for three months or six months to the prison, and then let loose to rush anew into crime, and commit fresh depredations and outrages upon society; but be kept under restraint until their characters shall be changed by training, or if not changed, they will be kept under restraint for life—with as many virtuous gratifications as their condition will permit. Benevolence would acknowledge such a procedure to be kind; Veneration, to be respectful; and Conscientiousness, to be just both to themselves and to society. The idea of inflicting so much punishment for such an amount of crime has now been given up in theory by all enlightened men, but practically it is still adhered to. Our duty is to withdraw external temptation, and to supply by physical restraint, when necessary, the deficiency of internal moral control. When it comes to the reckoning, and the question is put to the first class of men. " What have you done to put away temptation from your weaker brethren, to elevate their character, to prevent them from evil," it will surely not be a satisfactory reply to say, "We made laws prohibiting them from crime, and punishing them for its commission; we imprisoned them when they committed smaller offences, and hanged them for enormities." No: such men are morally blind, and it is not for you to wreak vengeance upon them for their misfortune, but to keep them out of harm's way—not to immure them in prisons for punishment, but to place them in asylums for safety and recovery.

LECTURE XIV.

PHYSICAL EDUCATION.

THE subject of physical education is exceedingly extensive, and I have not time to enter into it with minuteness of detail. My intention this evening is, to bring before my non-medical hearers such an account of the human frame, as will enable them to appreciate the influence of physical condition on the mind.

You see here the human skeleton; this represents the bones, which form the support to the soft parts, and afford protection to many important organs. Attached to the bones are the muscles, which are fleshy bundles or cords, by the contractions of which the erect attitude is preserved and motion produced. This drawing represents the brain and spinal marrow, from which nerves proceed and ramify, the brain being contained in the skull, and the spinal marrow in the back bone. Nerves proceed from the circumference of the body to these parts, conveying sensation; from them to all parts of the body, producing motion. The skin covers the body, and serves to allow an extensive expansion of the nerves of sensation, which renders us sensible to heat, cold, pain, and other feelings from external causes. There are, also, innumerable little holes in it through which the waste matter of the body escapes by perspiration.

All parts of the body are in a continual state of decay, which occasions, of course, the necessity of renovation, for if particles of the body are continually passing away, others must be continually supplied. Now this new matter is supplied by the blood, a fluid which circulates through every part, and from which are deposited, in a way of which we have no conception, particles of just the kind necessary to the respective parts requiring them; to muscle it supplies muscle, to bone it supplies bone, to nerve it supplies nerve, and to brain it supplies brain. Health is the sound condition, complete and equal play, of all the various systems of the body. It is attended by a feeling of satisfaction which seems diffused throughout every part. A friend of mine truly and beautifully said, "I never think myself in health except I can go out, of a summer's morning, and standing upright, with my eyes fixed on space, and my mind unoccupied, feel that life itself is a blessing, and thank God that I am a living man." Disease is the unsound state or discordant play of any of these systems, and may be either structural or functional. If an arrow should be shot into the eye, the consequent disease would be structural. Functional disease is that in which derangement of structure is not visible, but in which the function is performed too feebly or with morbid energy. Suppose we look at the sun for a while: the function of the eye is disordered; if we turn the eye from it to some other object, we may still appear to see the sun where there is in fact nothing but a wall. This is functional disease; and, generally speaking, repose alone is sufficient to restore healthy action, when over-exertion has ceased.

Health being the foundation of all happiness, its preservation is of the utmost importance; and to preserve it, we must know those laws on the observance of which it depends. So far as the lower animals are concerned, these are observed instinctively. Muscular exercise is secured by the enjoyment which is evidently attached to it; thus you see the horse, in a rich pasture, galloping and gambolling. In many animals it is secured by its necessity in obtaining food. Pure air they have from living in the open air. Cleanliness, they all attend to, and thus keep their pores open; you see the cat assiduously cleaning herself—the birds cleansing their feathers by the stream; even the pig forms no exception; I have been told by many farmers, that when allowed straw, it always kept its sty clean and comfortable. Animals observe these laws without knowing why; they are impelled to do so by the Creator, operating through their constitution. To man is given reason—the power of observation and adaptation. He must study his own constitution and that of the external world, and observe the relationship which God has established between them, in order that he may know the laws of health, and conform to them. That there is great occasion for such knowledge and such observance, is evident from the records of mortality. According to the Westminster returns, from one-fourth to one-fifth of all that are born there, die before arriving at two years of age. I am told that the mortality is still greater here. Now, of such mortality, there is no example in the animal kingdom; and for this no other reason can be adduced, than that by man the laws of health are neglected or outraged, while by the brutes they are instinctively observed. How great an amount of human misery arises from this premature mortality!—Hardly one of these children dies without lacerating a mother's affections and blasting a father's hopes.

The food which we eat has to undergo a variety of processes before it can be assimilated to the body, or be made to form a part of its substance. In the first place it is taken into the mouth, where it is ground by the teeth, or masticated; during this process it is mixed with the saliva, after which it is swallowed, passing from the mouth through a tube into the stomach. This last organ lies in the upper part of the abdomen, as you see in this drawing, it is shaped like a bagpipe, and has two orifices; by one it receives the meat coming through the food pipe to the stomach, and by the other, called the pylorus, the food passes into the intestine, called the duodenum. The stomach is amply supplied with blood-vessels and nerves, the latter being more numerous here than in any other part of the body, and derived from many different sources; for which reason it sympathizes with almost every other part, and may be considered as a kind of common organic centre. The food undergoes in the stomach such a process as changes it to a greyish fluid called *chyme*, which, when properly digested, presents itself at the lower extremity of the stomach, and passes through the pylorus into the duodenum. But mark this, around the pyloric orifice there is a band of muscular fibres, which, when contracted, keep it closed, and which have to relax in order that the chyme may pass through. Now if the food which presents itself is not properly digested, these circular fibres will not relax, but the food is sent back to be digested still more; it may again and again be presented, and again and again sent back; but as this, if carried too far, might cause serious injury, the fibres at length give way, and the undigested food is allowed to pass. When the chyme has arrived at the duodenum, it is mixed with two fluids: one from the liver called bile, the other from the pancreas called pancreatic juice; and is turned by their action into a milk-white fluid called *chyle*. The intestines, like the stomach, have three coats; but the inner or mucous coat is in folds, to give a greater extent of surface. On this an innumerable quantity of small vessels open their mouths, and draw in that part of the food which is fitted to nourish the body; these are called lacteals. They terminate in one common tube, called the thoracic duct, which passes up the posterior part of the chest, and empties its contents into a vessel called the subclavian vein. The fresh nourishing matter thus carried with the blood to the heart, is sent to the lungs to be subjected to the vivifying influence of the air.

Fluids taken into the stomach do not go through the same process, but are absorbed and taken immediately into the blood, whence they soon reappear in the kidneys, and are thrown out of the body.

I lately visited the Coloured Asylum in this city, which is, in many respects, a creditable institution, and there became acquainted with a fact which well illustrates the importance of diet in the training of children. Acting under the influence of some teacher who has been lecturing in this city, the managers of the institution had confined the children to an exclusively vegetable diet, with the expectation of improving their morals. Now children should have diet—not excessive, but sufficient, solid and nutritious. If you give an exclusively vegetable diet, you do, indeed, render the blood less nutritive and stimulant, and thus weaken the propensities; but, as the same blood nourishes also the moral sentiments and intellectual faculties, they are weakened in proportion, and the tone of the whole body lowered; so that nothing is gained in point of morality, and much is lost in health and vigour. This was soon discovered. In the Asylum the effect of this exclusively vegetable diet manifested itself by means of scrofula and general debility. It was laid aside, and under the influence of a more generous diet, the children soon began to recover. An adequate supply of good and sufficient food is absolutely necessary to health.

Another essential condition to health is, that the lungs be always supplied with fresh air. These are two bodies, one on each side of the thorax, composed of a light spongy substance, and filled with innumerable air cells, which are said to present an extent of surface equal to twenty thousand square inches. The heart throws the blood into the lungs, and, when we breathe, the air passes into them; so that the blood is on one side of the thin membrane of which the cells are composed, and the air on the other. Through this membrane the changes which occur in the blood take place. The common air consists of three distinct gases in combination, in one hundred parts of which seventy-seven are nitrogen, twenty-two oxygen, and one carbonic acid gas. Now, the breath expired is found to differ from the air taken into the lungs, and the blood sent from the lungs is found to differ materially from the blood which was sent to them. Of the air, the oxygen is diminished, and the carbonic acid increased; oxygen is therefore considered as the supporter of life. The blood which arrives at the lungs is of a dark purple hue, and is unfit to support life; that which passes from them is of a bright scarlet hue, and is fitted for the body's nourishment. The use of nitrogen is not known; but Sir Humphrey Davy found that on breathing eighteen inches of common air, five of nitrogen disappeared. Dr. —, of Boston, suggests that it combines with chyle, and imparts to it its red appearance. When we analyze the body, we find in it a considerable quantity of azote; and in this way does he suppose it to get into the system. This theory needs confirmation, but is very plausible.* If the air be not pure, the venous dark blood does not

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* The lungs are composed of a very thin membrane, which, for the purpose of presenting a large surface in a small space, is folded in the form of cells; these do not communicate one with another, but with the minute twig of the windpipe which leads into each.

The exceedingly minute blood-vessels of the lungs are contained within the membranous walls of the air cells, through which the following changes are produced:

1. *In the air.* The air contains more carbonic acid and water, and less oxygen, after respiration than before, the amount of carbon gained being somewhat less than that of oxygen lost. Sir Humphrey Davy states that the quantity of nitrogen is diminished; Dulong and Berthollet, that it is increased. Dr. Edwards has reconciled these discrepancies by showing that nitrogen is both absorbed and exhaled, and that sometimes absorption preponderates, sometimes exhalation.

2. *In the blood.* The blood is changed from a dark red to a bright scarlet hue. Its temperature is increased, according to Dr. J. Davy, one, or one and a half degrees. The amount of carbonic acid is diminished, of oxygen augmented.

Some may find it difficult to conceive how such extensive changes can be produced through the walls of the cells and vessels; I therefore remark that the animal tissues are full of invisible pores, to the fluids undergo the necessary change, but is sent back, of a dark hue, to all parts—and, of course, to the brain, which, therefore, is not sufficiently nourished and stimulated; great dulness and drowsiness ensue, followed, if continued, by diseased action. To afford sufficient quantity of fresh air in churches, schools, and lecture rooms, is, therefore, very desirable. If they are not well ventilated, the brain is oppressed, and cannot, of course, act with clearness and energy. Dr. Reid, who was employed to ventilate the houses of Parliament, considered it necessary to supply ten cubic feet of air a minute for each person they were adapted to accommodate. This air is sent in of proper temperature. The effect of bad air we see this evening. This hall is crowded to excess, and there are no adequate means of ventilation; hence the faintness which a number have been subject to; two or three ladies have had to be led out.* We have done much to reform matters in our own country. though we have had an arduous task. There is still much to be done, however; and you have much to do in this country, in your public halls and schools.

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contained in which, the softness of animal matter is attributable. Through these pores, gases readily permeate, as the following facts prove.

1. If two gases be placed in contact with the opposite surface of a moist bladder, each gas will pass through the bladder till both are equally mixed.

2. If a bladder containing liquid, be placed in a gas, the gas will pass through the bladder and become absorbed by the liquid, whereas, none of the liquid will escape.

Hence it is obvious that gaseous matters may become dissolved in the blood which circulates through the lungs, by permeating the invisible pores of the air cells and minute vessels, notwithstanding that no openings exist large enough to give exit to the blood itself.

* This was spoken in Clinton Hall. During Mr. Combe's stay, the Directors of the Institution, with a promptitude which did them great credit, opened two apertures for ventilation and produced a great improvement on the air of the room. Mr. C. made still stronger objections to the Lecture Room at Stuyvesant Institute.

What we call the heart, may, in fact, be considered as two hearts; a right and a left; by the right heart the blood is sent to the lungs, by the left to the arteries. But each of these consists of two muscular bags; and the circulation of the blood may be thus explained: The heart has two vital properties, irritability, and contractility; by the first of which the stimulus of the blood is perceived, and by the second of which the muscular fibres of the heart shorten themselves, or in other words, contract and close the cavity. The venous or dark blood is poured into the first sac of the right heart, called the auricle; this, when filled, closes like a sensitive plant, and forces the blood into the right sac, called the ventricle; the ventricle then contracts, and forces the blood through tubes into the lungs. Here the blood is vivified, and rushes to the auricle, or first cavity of the left heart, which contracts and forces it into the second cavity, or the left ventricle: this contracts, and forces it into the great canal for the conveyance of arterial blood, whence it is distributed to all parts of the body, supplying nourishment. It returns through other tubes called veins, is received into the right auricle, and passes through the same route as before. The body contains, it is supposed, from twenty-five to twenty-eight pounds of blood, and that two ounces pass through the heart at every beat; according to which, all the blood must pass through the heart every three minutes.

The brain is that organ which supplies nervous energy or spirits, as we say, to all parts of the body; thus, if the nerve which communicates with the stomach be divided, digestion is at once arrested. Now, if by any means we continuously concentrate the whole nervous energy to any particular part, the other parts necessarily suffer. Thus, if, by the occurrence of some great calamity, thought and feeling be kept in long-continued and inordinate activity, the digestive and respiratory functions are ill performed, the blood is deteriorated, and the body wastes and sinks with rapidity. So if the muscular system be inordinately exercised, the nervous energy seems to be exhausted upon it; and, if after such exercise, we attempt to read or think, the brain is indisposed to activity, and we fall asleep. Without exercise, waste matter is not thrown off from the body in a proper manner, and the blood does not circulate with due force; but if carried to excess, it interferes with our power of thinking and feeling with vigour and continuity.

If the brain be employed too energetically, then is there a sense of discomfort and anxiety; we are, perhaps, troubled with headache and indigestion, the stomach loses its tone, the mind itself becomes affected, and the whole system diseased. I have often met with Americans seeking health in Europe; and have generally found that, led on by the spirit of competition, their brains have been kept continually burning with excitement, till their bodies have become diseased, their nervous system has lost its energy, and Death seemed to be tapping them on the shoulder; they have then been forced to give up business entirely, and try the effects of a voyage and continental travels. Here the nervous system, though gently excited by new objects, is allowed comparative repose; the exercise is gentle but not too great; being much in the open air, the blood is well oxygenated; and not being pressed for time, digestion is allowed to go on in a proper manner. In short, health is broken by violating the laws on which it depends, and restored by their observance.

I speak the more earnestly, because I speak from sad experience. When young, I hardly knew that I had a brain or a stomach—much less the laws which govern their modes of activity; and for three or four years used to study from six in the morning till ten at night. But I dearly paid for my imprudence—I greatly impaired my digestive functions, weakened my nervous system, suffered great misery, and became almost incapable of thought. I am now giving you information which, if I had possessed at fifteen years of age, and attended to, would have saved much suffering and feebleness during seven years of the best part of my life, for which nothing could ever compensate.

Allow me now to address some remarks to the ladies especially; and in doing so, we will make the skeleton the first object of contemplation. The bones are formed by depositing bony matter in cartilaginous substance. In infancy comparatively soft, they go on hardening to old age. By disregarding their flexible nature in early life, much deformity is occasioned. Ladies wish to see their children walk early, they put them to the feet before the bones are sufficiently strong; in this way the legs are often distorted. Or they put leading strings around them to keep them up, and thus the ribs are pressed upon and deformed; pressure is produced too, upon the stomach, liver, lungs, and other viscera, occasioning sad consequences. Nature is in all these things the sure guide. When the child feels the necessity for muscular exercise, it attempts to crawl about on all fours, and delights to tumble about the floor; this is the best form of exercise in the particular circumstances; it strengthens the little muscles of the child, which begins in a while to raise itself by the chairs, and finally to walk. All this is natural and safe; which the system of urging and dangling is not.*

I have before stated that in the human skin there are innumerable pores, from which waste matter is continually passing. Cleanliness is, therefore, another essential requisite in the treatment of children; but, as young children are susceptible to atmospheric changes, you must be careful not to expose them too much. I am told that in this country it is not usual to protect the heads of children, and that some physicians recommend this neglect; I cannot but consider this injurious. The temperature in this climate ranges in a very short space of time over an extent of forty degrees:—other parts of the body are protected, and why is the head exposed to such vicissitudes? The brain is a very important organ. In infancy the skull is very thin, and there is very little hair. Some protection, therefore, seems necessary, though to stimulate the brain by too much clothing is injurious. Captain Parry relates that on one very cold day, he sent two young gentlemen in search of a marine, who had been exposed to a temperature much below zero, without any adequate protection; and that so great was the effect, even upon them, that when he sent for them into his cabin on their return, they looked wild, spoke thickly and indistinctly, and it was impossible to draw from them a rational answer to any of his questions. After being on board for a short time the mental faculties appeared gradually to return with the returning circulation, and it was not till then, that a looker on could be easily persuaded, that they had not been drinking too freely.

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* The author of the "Histoire Naturelle et Morale des Iles Antilles," published at Rotterdam, 1658, remarks that Charib mothers allow their infants to tumble about on beds of cotton or dried leaves, without either bandage or swaddling clothes; and that "*nevertheless, they do not become deformed, but grow marvellously well, and most of them become so robust that they can walk when six months old.*" And all of them are straight and well made! This he seems to have considered a truly marvellous result, and it never once occurred to his simple and *civilized* understanding, that the savages were in this respect reaping the reward of fulfilling the intentions of nature.—Ed. Phren. Journ.

One great evil to which the fair sex is liable is deformity of the spine. The spine or back bone is supported by many muscles which keep it erect, as a mast is kept erect by the ropes. If these muscles be compressed they become weakened; if made to support the body for a long time in an erect, stiff position, they become exhausted; if this is persisted in, the spine gives way; but as there is a natural tendency to equilibrium, the curve of one part is compensated by a curve in another, and thus, in such deformity, there is generally a double lateral curve, somewhat like the italic letter *f*.

When I was young, the remedy for this was to use a steel support. What would you think of me if I recommended, in order to strengthen the arm, that you should bind it in splints, and keep it perfectly still for three monks. You would see the absurdity at once, and yet, the using of a steel support to the spine for the purpose of strengthening it, was just as absurd. The only rational mode of strengthening the muscles is by exercise. When I was lecturing upon this subject some years ago in Edinburgh, a lady was present, who, on going home, noticed that her daughter, a young lady of nine years of age, had slight deformity of the spine. She became alarmed, and was led to think of the best course to be pursued under the circumstances; seeing her daughter next morning attempt to lift some earth with the gardener's spade, she thought that that would be just the thing to encourage her in. Accordingly she asked her if she would like to have a little spade of her own. Oh yes, was the reply; she would like it very much. She was then asked if she would like a little wheelbarrow to wheel earth from one part of the garden to another; she was perfectly delighted with the idea. They were procured, she was directed how to use them, and cautioned never to continue their use after she felt fatigue coming on. The young lady shoveled and wheeled in the open air day after day; the whole muscular system was exercised, but particularly the muscles of the back. In three or four months the curvature was completely removed, and she resumed that form of elegance for which she is still distinguished. She is now grown up, and has told me that she looks back to the time she spent in digging and wheeling, as among the happiest of her life.

The next point to which I would draw the attention of the ladies is, the importance of free action in the lungs. This subject is nearly threadbare, but still it is necessary to return to it. Whenever you see the breast flat, and little space in the chest, it shows that the lungs are small, and that the blood cannot be properly aërated. This difficulty, it is obvious, would be increased by compressing the chest or by inhaling bad air; yet, notwithstanding that a small chest is incompatible with vigorous health, we find ladies doing all they can to compress their chests into the least possible dimensions, having some how or other acquired the extraordinary notion that a narrow, spider waist is beautiful. It is probable that the notion originated from the circumstance of some persons of high rank being deformed by nature rendering deformity fashionable. In the old country this fashion is fast going out, especially among the higher clases. A lady who should now enter a drawing-room in London, Edinburgh or Dublin with her waist compressed in the way which a short time ago was prevalent, would be set down as unfashionable and vulgar, the spectators would whisper "there goes an uneducated woman." I am sorry to see, as I do in walking Broadway, that among your ladies the spider-waist is in great esteem, and tight-lacing prevalent. I would respectfully observe that by this distortion they assume that they have more knowledge, judgment and taste than the Creator himself. These very ladies pity the savages, who seek to improve the form of the skull by compressing it. They see that this process renders the "human form divine" truly hideous. They laugh at the Chinese women, who attempt to amend God's handiwork, by compressing their feet till they render them unfit to support them. But by a blindness of perception, which would be incredible, if we did not witness it, they perform the very same operation on their own waists, and sap the sources of health and life—surely God did not make their waist so imperfectly, as to need their assistance to improve it. By this practice, the heart, lungs, stomach, liver and other viscera are compressed to a most injurious extent, being cooped up so as hardly to be able to perform their functions; the circulation too, is interfered with, and a large extent of exhaling surface. Yet, with all these pains, they only render themselves pitiable spectacles to all who possess correct taste. Not such forms do the painters and sculptors take as the models of beauty.*

That form is best in which the brain, chest, abdomen and limbs are all in due proportion. When any of these preponderate greatly in size, beauty suffers: thus, if the abdomen is much larger than the rest of the body, we have a figure like a hog standing on its hind legs. The Creator has implanted in our minds a love of the beautiful for a wise purpose; for it is found that beauty of form and perfection of healthy structure and action are most intimately connected. A female figure of the finest proportion for symmetry and beauty is, *cæteris paribus*, the most favourably constructed for healthy action. If the carriage of the body be erect, and the motions easy and graceful, these are indications that the bones are solid and the muscles energetic—that the blood is well nourished and well oxygenated, and that it circulates freely. If the countenance beams with intelligence and goodness, this is an indication that the moral and intellectual regions of the brain predominate; and the individual in birth and constitution is one of nature's nobility.

I deem the study of the fine arts important. He who considers the beautiful human form as addressed to Amativeness alone, or chiefly, takes a most degrading view of it. It is addressed to Ideality, which contemplates it with keen delight; to Veneration, as the chief of the Creator's physical works; and to Intellect it gives the highest pleasure. Viewed in this light, I see not only no immodesty, but the greatest propriety in ladies visiting galleries of the fine arts. No better school can be selected for the mother, who, being thus made familiar with the most perfect and beautiful creations of the painter and sculptor, would carry in her mind standards which would enable her readily to detect deformity in her children, and lead her to seek timely remedial means; and I am disposed to think, that if ladies were instructed in their youth in the uses of the human frame, and taught to appreciate the conditions and proportions of the different organs that are most favourable to health and beauty, they would, when they were mothers, become far sooner aware of disorders in their children, than they now are, and would save the lives of many of them. Dr. John Bell, of Philadelphia, has published an excellent little book on this subject, called "Health and Beauty;" which I beg leave respectfully to recommend. Who, for instance, after gazing at this painting of Eve at the fountain, could admire the spider-waists? From being presented in its proper light, the study of the fine arts has in the old country become much more general. Ladies study the natural figures, and pass round the galleries where they are exhibited, without the slightest feeling of impropriety on their own part, or that of any cultivated or correct mind.

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* I knew a young female of some distinction, as respects both her mind and family, in the city of New-York, who, some years ago, became known from tight-corseting, by the name of the "lady with the small waist!" Notwithstanding her good sense in other things, this excited her ambition to render herself still more worthy of the title, and to prevent, if possible, in others all competition for it. She therefore increased the tightness of her corsets, until she became hump-shouldered, and died of consumption. Nor did any one doubt that her corsets were the cause. She was married, and left an infant son, who, from the slenderness of his frame and the delicacy of his constitution, is threatened with his mother's complaint. He inherits her *corset-broken* constitution. Caldwell on Physical Education. p. 110.

I will now address my observations more particularly to the gentlemen. Some have received a favourably, organized constitution, the greatest gift that Providence can bestow upon man. The head is of proper size, the lungs are well developed, the digestive organs in good order. Persons so blessed are very apt to laugh at the caution of others, and to keep in a continual blaze of excitement; they eat hearty dinners, rejoice in convivial suppers and in punch and in wine. Warn them of their danger, they mock at your fears. But nature is keeping with them a reckoning. With some she keeps a daily account, exacting punishment for every offence as soon as it is committed; with some she keeps an account current, and she does so with the persons of whom I speak. It may be years before she exacts payment, but when she does so, she exacts the utmost farthing. Not one of their aberrations but is then found to have been a nail driven into the coffin. I cannot tell you how many people I have seen start in manhood with fine, robust constitutions, and, after the vigorous enjoyment of health for years, fall into premature graves, from attacks of apoplexy, paralysis, or some severe form of disease; while those whose weakly constitutions imposed the necessity of incessant watchfulness, outlived them.

There is a class of men in whom the brain predominates, and the lungs and digestive organs are comparatively weak, such persons delight in mental activity; muscular exercise is disliked, the brain is continually on the stretch of excitement. But when we reflect that in thinking we use the brain, just as in walking we use the muscles, and that, in order to keep the brain in activity, nervous energy must be drawn from the general system, all parts of which, under such circumstances, perform their functions feebly, the impropriety of this course is evident. The muscles will be weak and unenergetic, and the stomach will badly perform its duty.

Two concentrated actions cannot go on in the system at the same time: if you digest well you must think badly; if you think well you must digest badly. The best plan is to spend an hour or an hour and a half after each meal in trifling conversation. If you talk nonsense, so much the better, as that needs no attention; and instead of that hour being counted as lost, it will, I assure you, be the best spent of the twenty-four. People say they cannot spend the hour in such a way: business or professional duty or study, requires their attention. But I answer, that if they go from the table to mental avocations, attention will be feeble; every thing will be performed unenergetically—whereas if they allow the hour for digestion, the brain, when they go to work, will be fresh and vigorous, and they will do more than if they had been at work all the time.*

In bilious and nervous temperaments the skin is generally inactive. I have told you how great a quantity of matter should pass off by this organ; its inactivity is therefore very detrimental. To promote the secretion of perspiration, as well as the other secretions, nothing is more important than exercise, which should be taken in due quantity by every one. To keep the skin clean is of prime importance, and this may be done by sponging or washing the body daily. Perhaps the best wash for this purpose is composed of one-third vinegar, and two-thirds water, or a mixture of common salt and water. After sponging the skin it should be well rubbed with a coarse towel or hair glove.

There are some men in whom the digestive system predominates: these are what are called easy fellows, jolly companions. They live a very happy sort of life, so long as things go on well. They eat and drink heartily, enjoy pleasant, thoughtless conversation, and sleep soundly and long. But business is often neglected by them, and their easy, careless habits become a great source of trouble to all who may be dependent upon them for support. To correct this constitutional tendency, let the quantity of food be diminished; let what is taken, however, be solid and nutritious, and let plenty of exercise be taken in the open air: this course will give good stimulating blood, and consequently increase mental vivacity.

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* Among children, barbarians, and all whose brains are not much over-tasked, affections of the stomach are hardly known. Our native Indians will eat an enormous quantity of food even after a long fast, with seeming impunity. The Esquimaux often eat ten or twelve pounds of animal food and drink a gallon of train-oil in a day, without being troubled with dyspepsia in the slightest degree.

The importance of pure air is a subject which, until late years, hardly entered into the heart of man to conceive. In the Scotch churches, for instance, it is the practice to go in at eleven remain till near one, and go again at two. Now, the practice formerly was to close the door as soon as the people came out, in order to keep in the heat. They thus retained the air, vitiated by being breathed in the morning. The people went home, loaded their stomachs, and returned to church. Here, then, the laws of health were clearly violated—first, in breathing bad air, and next, by engaging in serious mental occupation with loaded stomachs. The consequence was, that nature was too strong for the minister, and many of the congregation slept. This annoyed him very much, and many is the sermon which I have heard preached against the sin of sleeping in church. The consciences of the congregation troubled them a good deal, no doubt, but there was no reformation. Now the laws of health are better understood, the moment the congregation pass out of the church, the windows are thrown open, even in the depth of winter, so as to allow a change of air. Instead of eating a hearty dinner, people generally content themselves with a light lunch, deferring dinner till after the second service. By thus conforming with the laws of health, the drowsiness of the Scottish congregations, has passed away, and with it the occasion for sermons on the sin of sleepiness.

The laws of health, as regards ventilation, were still more outraged in our schools. In the winter season we were kept in for hours with the windows closed tightly; and so vitiated did the air become, that to a stranger entering from the street it seemed almost poisonous. In proportion to the length of time we remained in, the air became vitiated more and more, and the blood worse and worse aërated, losing thus its healthy stimulating properties. This rendered us dull and inattentive; but in proportion as mental energy decreased the birching increased, the master attempting to compensate for the stimulus of good blood by the stimulus of pain. The school was thus rendered a place of torture and terror. We have reformed matters in our own country considerably; but here, on visiting the public schools, I find you have much yet to do. You have no adequate provision for a supply of fresh warm air. Recollect the air must be warmed before let into the room. If you attempt to ventilate by throwing open the windows, you have the children near crying out that they are catching cold, and indeed much injury must ensue. Should there be now listening to me any member of the civic corporation, I would recommend this subject to his especial attention.—He could not be more worthily employed than in effecting a reform. I know it is difficult to effect changes involving expense. The common cry of demagogues is economy, economy. They are for retrenching every thing, and allowing money for nothing; hoping thus to gain favour with the people. Economy is a very good thing; no one can be a greater advocate of it than myself; but the economy which I recommend would extend to the health of the rising generation, and a small outlay for the attainment of this great end, would never be regretted by a wise and philanthropic community.

We have effected great changes in Edinburgh in our public assembly-rooms as well as in our schools and churches. All, I believe, are now properly ventilated, except the Waterloo rooms, and they are yet as close as a bottle.—Seeing the great importance of good air to all, young and old, healthy and diseased, what would you think were I to tell you that a lunatic asylum has been built at an immense expense, and no provision made for a supply of fresh air—the importance of ventilation being entirely overlooked; yet such is the case with the new lunatic asylum of this city. On going through it I pointed out this great oversight. A gentleman distinguished for his enlightened interest in public improvements, suggested that, as the plaster was two inches from the wall, a sort of flue might be formed behind it. But for this fortunate suggestion the means of ventilation would have been entirely absent. In mentioning these things, I am not blaming any one, but merely drawing attention to such facts as come under my observation.

I must ask any member of the civic corporation, who may be here present, whether he has seen the pauper school on Long Island? If he has not, I advise him to go and examine the size of the rooms—inquire how many children sleep in each, and what means of ventilation exist. Having done this, let him reflect and decide for himself whether the state of things in these respects is not the cause of opthalmia and other diseases.*

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*Mr. Combe here recommended to the attention of his audience an instrument invented by Mr. Jeffrey, of London, called the respirator, intended to obviate the irritating effects of cold air upon the lungs in asthmatic and consumptive patients.

The respirator is worn over the mouth, and is constructed on strictly scientific principles. It consists of the instrument proper and its appendages. Tho instrument is formed of a number of wire plates or sieves made somewhat after the manner of those of Davy's safety lamp, and fixed in a flexed frame. The breath, in passing through these plates, yields its caloric to the wires. The caloric is taken up by the cold air which is drawn through the instrument during inspiration, and thus raised from the freezing point to from 60 to 80 degrees, according to the quality of the respirator used. The air, too, in its passage inward, parts with the grosser irritating particles which it may contain. The appendages consist of a cushion around the frame-work, in which at the lower part is a sponge to absorb whatever moisture may be condensed on and run down the plates, a silk border which may be drawn more or less tightly round the mouth, and attached to which are cords which pass round the back of the neck and over the head to keep the instrument firmly in place.

The respirator is recommended by Sir B. Brodie, Sir Anthony Carlisle, Sir James Clark, Sir Astley Cooper, Dr. Elliotson, Dr. Conquest, Dr. Paris and other eminent medical gentlemen.

Mr. Combe said that a friend of his who had for some time coughed so much during the night as to be hardly able to sleep, was enabled to do so without disturbance on the first night of wearing the instrument, and until he recovered.

Mr. Combe exhibited a shoe, also, of peculiar construction, remarking, "I exhibit it for two reasons: first, because it is of a form conducive to health and comfort; and, secondly, because it evinces the advantages of scientific information in its application to the arts. This shoe, you observe, is very strong in the sole, and yet perfectly flexible—the space between the heel and fore part, or that constituting the hollow, being formed of India rubber. The inventor is a Mr. Dowie, who, while attending a course of Physiological Lectures in Edinburgh, observed that the spring of the foot was in the instep. He reflected upon the advantage it would be to have that part perfectly free, and the consequence was this invention. He took out a patent for it, and shoes of this construction are now being tried by a company of soldiers, under the inspection of proper persons, for the purpose of ascertaining correctly their advantages over those ordinarily used. I doubt not that the report will be favourable."

LECTURE XV.

TRAINING.

THE proper training of the mind means the proper training of the organs. Without the brain, the mind cannot act; without a healthy brain, it cannot act energetically. The first element, then, in education, is to have the brain in a state of vigorous activity; and, in my last lecture, I pointed out the intimate dependence of this condition on good and sufficient food, good air, the proper excretion of waste matter from the body, cleanliness of the skin, and on the quantity of clothing being adequate to the season, but not too great. I showed that when the food consists of mere slops or vegetable diet, when the air is vitiated, and the clothing inadequate or excessive, the tone of the whole system is lowered.*

I revert to ventilation for the purpose of remarking, that, in this country, one-fourth of all who die, die of consumption; and, when I see the neglect of ventilation which is here so common, I do not wonder at it. I have not the least doubt, that by proper attention to ventilation and to the skin, this number might be greatly reduced. I state this from the experience of the best-informed physicians.

The great importance of understanding whether the brain be a single organ or a congeries of organs, cannot be too clearly set forth. If the mind be a single organ, then mental exercise, of whatever kind, should be beneficial to its whole powers. If it be a congeries, we have to attend to the particular exercise of each. Suppose a trumpet to be improvable by practising on it, every note would be improved by improving the tone of one; but if the instrument were a piano forte, in which each note depends on a separate chord, it would be absurd to hope for the improvement of all the chords by improving a few merely. Some might produce the correct notes when struck, while others might produce nothing but discords; and others, being broken, might emit no sound at all.

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* By education, in the abstract, I mean a scheme of action or training, by which any form of living matter may be improved, and by perseverance reared to the highest perfection of which it is susceptible.—Cald. Phys. Ed. p. 6.

From the fact of the brain being the organ of mind, flows many important results; one of which is, that being weak and immature in childhood, like the legs and arms, it cannot bear much exercise; that it strengthens with age, and that the exercise or labour should be proportioned to the strength. You cannot impose excessive labour on the brain, any more than on the rest of the body, without doing injury. Hence the great folly of that constant mental application which it has been, and still is, to a great degree, the endeavour of parents and teachers to keep up. In Scotland, at the public schools, we used to be in attendance seven hours a day—from nine to one, and from two to five; and the result was this: for an hour in the morning we were able to attend assiduously to our lessons, but then the brain became exhausted, and the scholars restless; they were poking each other with their fingers, pinching each other, flirting peas, and scratching the desks. Some became noisy, some listless; then came the birch, for the purpose of infusing new stimulus into an exhausted brain; the scholars were rendered miserable, and induced to look on the school with disgust, the teacher was harassed and discouraged. Now, when the effect of these things is better understood, many of the schools of Edinburgh have reduced the time of tuition to *four* hours a day—two hours at a time; and it is acknowledged that more Greek and Latin is learned in that time, than previously in seven hours; the scholars attend the school with pleasure, and the teacher passes his time with satisfaction. Nay, one teacher has reduced the time of attending to Greek and Latin to two hours a day, and still challenges comparison with the rest of the schools.

Mr. Fisher, a gentleman who takes scholars of from five to eight, has found the greatest advantage in the changes which he has produced. Instead of keeping them constantly at work, by rewards and force, for three or four hours in succession, he takes this plan: For the first hour he can obtain their attention without any difficulty; at the end of that time, he sends them out to run around St. Andrew's Square for a quarter of an hour. While they are playing, he keeps the windows open, and thus ventilates the room. In this way the children learn more, and enjoy such pleasure, that their parents complain that they would rather be at school than at home; the teacher's task, too, has become an agreeable instead of a painful one. I have been to the public schools of this city, and would advise you to go and judge for yourselves how far the laws of physiology are observed. The children go in at nine, and come out at three, having all the time but half an hour's intermission. Mature as our brains are, we take care to impose less on them than on the weak brains of the young. If I should lecture to you six hours together, you would say, "God preserve us!"

It is of importance, when children are at school, that their position should be easy. In my own country, children have to support themselves on forms without backs. We have produced a reform, however, in a number of schools; and I am pleased to see that in your country no complaint is necessary.

In educating children, it is of the utmost importance to take into consideration the influence of temperament. If the nervous temperament predominates, the child is delighted to learn; he would be continually at his books; he is intelligent, and shows such an intensity of feeling that he twines himself round the affections of his parents, who are in raptures at his astonishing progress, and urge him on his career, ignorant of the almost inevitable result. The nervous energy being drawn to the brain, the digestive system suffers most materially; and, while, by this premature development, he stands conspicuously above children of his own age, the blaze of excitement in which he is kept by continued thinking and feeling soon undermines his health, and, if not arrested, throws him into a premature grave. In such cases add not to, but keep down the excitement. See that such children take much exercise in the open air, urge them to lay down rather than take up a book. To do otherwise is to break the law of Nature, or of Nature's God; and long life is promised, not to those who break, but to those who obey his law; and the promise is fulfilled. That life is long and happy, which is spent in obeying the laws which are made manifest by observing and reasoning upon the nature of man and external things.

When the lungs predominate in a child, and the sanguine temperament, there is fondness for exercise; the food is heartily eaten, the sleep is sound. Suppose a child of this temperament to be sent to school after a sound sleep and comfortable breakfast: for a short time he may be still, but in a while the craving for muscular exercise will be too strong; he may be pent up, but cannot be kept quiet. He begins to be fidgety; may receive blows for it, but still he fidgets; the blows may be repeated, but without effect; he continues fidgeting, poking with his elbows, throwing peas, striking his neighbours with his feet, and striving in every way to expend this energy. Such children are generally said to be very clever, but to have no liking for their books. The usual plan has been to scold such children well; and, if not quieted by this, as is very unlikely, the scolding is followed up by a flogging, which is generally as inefficacious. The object should be to remove the cause of the evil. Let us attend to Nature, give such children an opportunity of first expending their muscular energy, and then they will be delighted with mental activity. Mr. Howe, of Boston, related to me an anecdote which finely illustrates this position. He had a boy who was the most mischievous that he ever met with; he broke the benches and boxes, wrenched the doors off their hinges, played all sorts of pranks, and could not be controlled. Mr. Howe thought of dismissing him; but knowing there must be a cause for this disposition, he reflected upon the subject, and hit upon an admirable remedy. This was to send him into the cellar every morning, to saw and split wood for three hours together. The boy was delighted and had soon sawn and split all the wood up; he was then set to running, leaping, climbing poles, and disporting himself in a variety of ways. Thus he got rid of his excessive muscular energy, and afterward proceeded with his studies in a proper manner. The doors and benches being perfectly safe.

Some children are of the lymphatic temperament; these are slow to learn, and indisposed to activity. The remedial plan has been to flog them continually. A much better is to study their constitution, and regulate our treatment accordingly; to give such children a moderate quantity of nutricious diet—animal rather than vegetable—let them have plenty of muscular exercise in the open air. By these means you diminish the lymphatic and increase the sanguine and nervous elements of the constitution. I call your attention particularly to the fact, that, in all countries, the method used to correct defects of organization and temperament has been to flog and shame the child that needed improvement;—one of the most gross instances of the application of brute force for the accomplishment of that in which attention to the laws of the constitution can alone be successful. It follows, from what I have said, that no rule can be laid down applicable to all cases. Specific differences must be closely attended to in the business of education.

We now come to the difference between *training* and *instructing*. This is vast. Instruction means communicating knowledge; while training implies the repetition of certain modes of action in the mind and body, until they become habits. It is a law of our constitution, that any organ, when accustomed to repeat frequently its action, acquires additional strength and facility in so doing; from this arises the force and advantage of habit. Suppose a lady be told that, to produce certain notes, she must strike such and such keys: you might continue the instruction for years without enabling her to play a tune, if she did not practice —if her fingers were not trained. So you may instruct a child in the precepts of the New Testament; but if he be not trained to religion and morality, if he be not accustomed to practice these precepts, instruction will be of little use. We must not be content with telling; we must act, and induce him to act. Do we wish to make a child kind and benevolent, we must be so ourselves. Do we wish to cultivate its veneration, we must manifest our own by addressing it with kindness, respect and courtesy. In receiving, the mind is passive; in training, it is active; and there is a vast difference between these two states. We may take a very common illustration of the effect of training. Suppose a child to live in a community where Combativeness, Destructiveness and Self-Esteem are particularly active: it will be the object of their manifestations. Resentment will be excited, and in it the same faculties be roused. Hence will result coarse, cold, harsh and vulgar manners. On the contrary, if a child be educated in a family where every human being is treated with respect—where Benevolence, Veneration, Conscientiousness and Love of Approbation are all active, wherever he goes, he will at once be recognized as a well-bred gentleman and practical Christian.

Another object may be to diminish the activity of some of the propensities; as Pride, Acquisitiveness, and Quarrelsomeness. Now, a very common method is to *tell* the child to do so and so; and, if it refuse or neglect, to discharge upon it a storm of words or blows. The child is overcome by superior brute force, but injured in the process. Phrenology teaches the true plan to be, to allay the excitement of the propensities, and to excite the moral sentiments by mildness, but firmness. Force addresses itself to fear alone; Benevolence, Conscientiousness, Veneration, are not at all exercised. Follow the child into its room, and there see the effect of such discipline. Has it compunctious visitings?—is it grieving over its faults. No, it is burning with rage and the desire of revenge; it longs to be a man, that it may escape from what it considers tyranny. People often forget, in the business of education, the gigantic power of man's moral nature, before which the propensities cower and quail.

In training the intellectual and moral faculties, the object, generally, is to raise them to the highest natural standard. This differs much in different individuals, and seems to have natural limits, beyond which it cannot pass. That organs grow by exercise, cannot be doubted. Deville says he has known them to grow after forty years of age. I do not say this is not so, but I have not seen them do so; I have seen them grow at twenty-eight years of age. But when size is not increased by exercise, the tone is improved and the activity exalted. In a former lecture I drew your attention to cases in which, the skull being removed, the brain was seen to be greatly excited by mental action. This cerebral excitement is owing, proximately, to the flow of blood to the brain; for the brain is subject to all the laws of the system in general. During exertion, blood rushes to it, as to muscles under like circumstances; and by judicious and well sustained exercise, a cerebral organ becomes enlarged in like manner as a muscle. If you want, therefore, to train Philoprogenitiveness, what is the only rational course? Not to tell the girl to love children; that would fall inefficaciously on the mind. No; present a child to her attention; let her be induced to nurse it, to watch over it, to play with it; this causes a rush of blood to the organ, which stimulates it, improves its tone and favours its growth. You might as well expect to increase the power, activity or a size of a muscle by instructing a youth that exercise is a duty, without taking care that he put his muscles into activity, as to expect the improvement of a cerebral organ under like circumstances.

The foregoing remarks are not theoretical, but practical, and founded on observation. I may mention that I observed to-day a case strongly confirmatory of the truth of the foregoing observations. The daughter of a scientific gentleman* of this city fell from the room window when she was about four years of age; her head struck upon the iron bar which extended from the railing to the wall, and the skull was extensively fractured, without rupturing the pia mater or doing any serious injury to the brain. She was attended by Dr. Mott; the skull was removed from the superior posterior portion of the head, the integuments were drawn over, and the child recovered. Immediately after the wound was closed, her father was struck with the variety of motions in the brain, and its great activity during excitement, producing as he said, a sensation in the hand as if it were feeling at a struggling leech through a silk handkerchief. The child has a well formed head, with large Self Esteem, Love of Approbation, and Firmness. I have before stated that bashfulness is principally an affection of Self Esteem; and, when I put my hand on the integuments soon after she entered the room, I felt this organ distinctly in great commotion, with Love of Approbation affected in a less degree. I spoke to her in a friendly manner; and as she acquired confidence, the commotion of Self-Esteem subsided, and that of Love of Approbation increased. The father stated that when intellect was engaged, the excitement in the region of the sentiments ceased. He gave her an arithmetical problem to solve which puzzled her a little, and all the commotion of Self Esteem and Love of Approbation disappeared, except the regular arterial throb.

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* James J. Mapes, Esq.

One great object of education should be, to train certain organs which conduce to a common end, in such way as to establish among them a communion of activity. Thus, to give the talent for music; Tune, Time, Weight, Ideality, and Imitation should be trained to work together. They may be all large, yet, without training, the efforts to make music will be imperfect. Suppose one of you, who had never attempted to speak in public, should rise to address this audience, from the place where I now stand: he would make a confused and incoherent speech, even if Language, Individuality, Eventuality, Comparison and Causality were large, because they would not act simultaneously. But let him practice—let him train those organs to combined activity, and he will become an eloquent speaker. So, in playing upon the piano-forte or harp, the muscles at first will not act well; but, by practice, their activity becomes almost wonderful. Training makes the great distinction between men on being introduced into a drawing-room. The most intellectual and amiable may feel very much embarrassed and distressed on seeing so many well dressed people; but, if he repeat his visits, and habituate himself to it, he may become the pride and ornament of a society, of which, at first, he seemed a hopeless member.

We have not the power of preventing our feelings, but we have the power of controlling them. They start into involuntary activity; it is for the moral sentiments to supply the curb. In most, the strength of their impulses needs to be lessened; and recollect, that every day in which the moral sentiments are trained, the activity of the propensities is diminished; just as, by using the right arm exclusively, we should diminish the power of the left. In some cases, however, though not often, a particular propensity needs cultivation; as Combativeness, for instance. This must be done by putting the child in a little danger, and training it to meet the danger well. I notice that the Rev. Mr. Warne has just issued a very judicious work on the subject of moral training, called "Phrenology in the family."

The next thing we want is INSTRUCTION; and let us inquire what constitutes instruction; the necessity of it is obvious. We must recollect that the propensities and sentiments are all blind. Philoprogenitiveness gives love of children, but it does not tell us what is the best way of managing them. Veneration gives us a tendency to revere, but it does not inform us what are the true objects of respect or worship; but man is sent into this world with a combination of faculties, admirably fitting him to attain this knowledge. An uninstructed man is one in whom all the organs work at random. Instruction consists in becoming acquainted, first, with ourselves, and then with the world without, with which we are in relationship; and with the mode of so adapting our conduct to external circumstances, as to produce the greatest amount of enjoyment to ourselves and benefit to others.

Let me here draw the line of distinction between the intellect of man, and what is called instinct in animals. Instinct enables its possessor not only to do certain things, but impels it to do them in a certain way. Birds, for instance, have an organ of Constructiveness, which gives them a desire to build nests; but it also gives them the tendency to build their nests in a certain manner, and in that only.— So the bee is instinctively impelled not only to build its hive, but to construct the cells in a certain way, that way being one by which the greatest amount of accommodation is secured in a given space. Man, on the contrary, has faculties enabling him to construct the most enduring and magnificent structures, but he has no particular plan impressed on his mind, according to which he must construct; he needs knowledge—instruction.

There are two modes of obtaining knowledge: the one is to present the object directly to the faculties, and then add the name; the second is to give the name, and add a description. Now a word is nothing of itself; before it is of the slightest importance, it must be joined to an idea. The difference of the two modes of instruction may be thus illustrated: I have a bust behind me; suppose I describe it to you, and give you the name: how faint would be your conception of its size, form and colour! I now present it to you, and give you the name; the object being directly presented to the faculties, you will obtain a better idea of it in three minutes, than from a description of three hours' length. When you send your children to school and set them to learn by rote, you give them words merely, not ideas; you increase their knowledge of signs, not of things. The true plan is, to present the object to the children; let them examine its form, size, colour and other particulars, and afterward tell the name, and spell it. All nature is adapted in the most beautiful manner to the faculties, and the study of nature imparts great pleasure. Thus the curiosity of children to know things is insatiable; you are aware that they will break their playthings to learn what is within.

When properly taught, the elements of all the sciences are simple. Talk to a child about geometry, triangles, and hexagons, and you will puzzle it completely; but present a figure, let it notice that it has three sides and three corners, then tell it that all such figures are triangles, and it readily understands the matter; so of the other geometrical figures. Children always take pleasure in learning by actual presentation; they can be instructed in almost any thing which can be presented to them directly, and subjected to their senses. To prove this, I dissected, before two girls and a boy, the heart and lungs of a sheep. Their delight was great, the impression made on their minds vivid and lasting. The teacher under whom I suffered—for that is the term commonly used in Scotland—was fond of mechanics, and he constructed a bridge after the plan laid down by Cæsar in his Commentaries, which was always brought out when a class came to that part. I recollect with what anxiety we looked forward to the time when we should be allowed to study Cæsar's bridge. At length it came; and then, instead of the disinclination to go to school, the tardiness, the truant-playing and listlessness of other times, all was eagerness and attention; there was no occasion for scolding or flogging; we went on reading and examining with the greatest assiduity; and thus the most difficult part of the Commentaries became to us the most easy. When the description was over, with what regret did we see the bridge deposited in the closet whence it had been taken!

The above, and other observations which I have made are well illustrated and confirmed by the results of Mr. Wilderspin's system of Infant Education. In the first place, the school-rooms are large and well ventilated, so that the children constantly breathe pure air; then, surrounding the school, is a dry, airy play-ground, and the play and lessons are so judiciously alternated, that neither lose their attractions by over-duration. And in the school, the truth that the organs of the brain, like the muscles of the body, will become wearied by long exertion, is practically attended to; one object of study is never dwelt upon so long as to cause fatigue.

In their intellectual exercises, the presentation of visible and tangible objects holds the most conspicuous place. By degrees they are familiarized with a great variety of substances—with their qualities and relations, their natural and artificial combinations. All the faculties which take cognizance of external things are thus directly stimulated and pleasurably exerted. They obtain, by this means, a vast amount of useful knowledge, as it were in play. The teacher will take a mathematical figure—a triangle, for instance—and ask them if they would like to talk about it? Yes, they are all anxious. He gets them to describe it. They see that it has three sides and three corners, and tell him so. After they have examined it for a sufficient time, he asks if they would like to know the name? Yes, they would like to know the name. He then tells them the name, and they repeat it. Would you like to tell mother how to spell the word?—he will then inquire, perhaps. Yes, they would like that very much. He then sets up the word with wooden letters, and they spell it over. In this way they learn to read, as it were, incidentally. Instruction is never prolonged more than a quarter of an hour. The classes in turn pass into the play-ground, which is the theatre for moral training. There the older children are trained to be kind and affectionate to the younger; every deviation from benevolence and conscientiousness—every outbreak of passion or manifestation of selfishness, is made a matter of inquiry; nothing, in fact, is considered too insignificant for such investigation. This is conducted openly, the children being the jury; they rarely fail to take a just view of the matter, and give a just award.

It is perfectly delightful to see the effect of this training. Temptations are not removed, but presented; and though many of the children are taken from the very lowest ranks of society, and some have not sufficient food, yet the dinners of their more fortunate school-mates—the currants, gooseberries, pears and apples in the play-ground, are all safe as if under lock and key. In our country, there are parents so poor that they have to send their children to school without dinners. This is made a means of cultivating the benevolence of the more favoured, who make up a dinner out of theirs for the little unfortunates.

I understand that in this country a number of these schools have been given up; on asking the reason, I was told that the parents were dissatisfied because the children did not learn to read as quickly and fluently as they desired. I saw a specimen, in Philadelphia, of an infant-school, the chief object of which seemed to be instruction in reading; and, certainly, some of them read beautifully. But I asked them what is meant by going to the right hand, what by going to the left, and told them to lift up their right hands. About one half held up the right hand, and the other half the left. I asked them which way was east, which west; they could not tell. A higher class was called up, and read about Jefferson taking the oath of the Constitution. I asked what was meant by an oath, and what by the Constitution; they could not tell. The teacher said it was impossible that they should know those things; but when they were grown up, she hoped they would find them out. I hope so too. The teacher was a very intelligent lady and wished to explain the lessons; but the parents thought that the time was lost which was dedicated to explanations, and they complained to the Directors of the School. She was then ordered to make "fluent readers" of the children as quickly as possible, which she certainly accomplished.

Scotland has had great credit given her as a land of education; but I am afraid we draw on the credit of what was our due two hundred years ago, when compared with other nations of that time. The discovery has now been made—not by phrenologists, but by a minister of the church of Scotland—that my country people are not half educated. I should say not one-twentieth—perhaps not one-fiftieth part educated. I mean by this that many do not receive even the rudiments of education, reading, writing and arithmetic, and that comparatively few receive more. Contrasting these slender attainments with the amount of instruction in the elements of natural science, physical and moral, and in religion, which is requisite to form a good education, and with the training which is necessary to teach children to practice it; I say that the people of Scotland are not one-fiftieth part educated. If you commence a reform in your educational plans, and carry them forward with energy, you will, in twenty years, confess the same of your own country at this time.

You are generally before us in the education of the people, but you are not so conspicuous for the *quality* as you are for the *quantity* of educational means. If you will inquire into the subjects taught in your schools, you will find, I am afraid, that the number of useful ideas imparted is not as great as it should be. I do not undervalue a knowledge of words; but to impart a knowledge of useful ideas should be the great object. You pay your money, why do you not take care to have your money's worth?

The Greeks and Romans were the earliest nations of Europe who attained civilization; in other words, they were the first who so far cultivated their mental faculties as to attain tolerably numerous and precise ideas of government, laws, morals, intellectual philosophy and the fine arts. In consequence of their minds containing these ideas, their language contained terms to express them. The ignorant barbarians of the north of Europe overturned the Roman empire, and became its rulers. These men had not reached the ideas attained by the Greeks and Romans, and their language of course had no terms by which to express them. A long night of barbarism prevailed over Europe for ages; and when civilization dawned again upon Italy, where it last set, manuscripts were taken from the lumber-rooms, disinterred from the monastic cells, and studied with avidity. They contained new ideas, as well as new words; were found to embrace more sublime and elegant poetry—more brilliant, pointed and ingenious wit—more just and profound views on law, criticism, and philosophy, than had been known since the subversion of the Roman empire;

and these treasures were embodied in languages so rich discriminative and refined, that Europe, in addition to this accession of knowledge, was at once furnished with excellent vehicles of thought without the labour of invention. Greek and Latin became, in these circumstances, objects of intense study among all men who aspired to superior intelligence; and, in establishing colleges for the study of those languages, our ancestors acted wisely, as they thus enjoyed the richest intellectual stores existing in the world. But the zeal for knowledge was in the course of time rewarded by new and stupendous discoveries. The moderns far outstripped the ancients in science, morality and religion. This state of things has altered the relative importance of Greek and Latin. There is now no idea which is not clearly expressed in our own language, and we have in Europe a thousand ideas in every thing relating to natural science, for one possessed by the Greeks.*

The ancients—as the moderns, until recently—confined knowledge to an oligarchy; it was never imagined that the vulgar mind, as they called it, could understand the arts and sciences. Phrenology dispels all these errors, by showing that all men have faculties for the understanding and appreciating of knowledge.

I would urge with earnestness the importance of Physiology as a branch of knowledge to be studied by all.—Lectures on this interesting subject are worthy of your earnest attention. In 1796 Dr. Beddoes delivered a course of lectures on Physiology, and in 1797 another course was delivered; after this such lecturing fell into disuse. When I revived it twelve years ago, it was denounced as absurd and indelicate; but it is now practised so extensively throughout the country, and the demand is so great, that if I had had ten lecturers in Britain, there would not have been more than might have been employed in filling the applications that I received. I perceive that a lady here has been lecturing upon Physiology to ladies, and that for this one of the papers has covered her with abuse. Of the character of the lectures I am entirely ignorant, and can say nothing; but, as every thing formed by the Creator has purity for its essence, I may say that if they were delivered with proper delicacy, I can conceive of nothing calculated to be half so useful to the sex to which they were addressed.

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* "If a man is a natural born fool, Mr. Speaker," said David Crockett in the House of Representatives, "and knows twenty different languages, what then? Why he has twenty different modes of talking foolishly." This bold and sagacious man, seems to have greatly undervalued the advantage which he here acknowledges the linguist to possess. It is undeniable that "a mouthful" (as John Bell has it) of nonsense and affectation, sounds far better, and is infinitely more imposing in a foreign than in our mother tongue.

I take the liberty to urge very earnestly on your attention, not only the advantage, but the necessity of introducing instruction in Anatomy and Physiology into popular education. The great laws of health cannot be understood, nor their importance appreciated, without this knowledge. I do not mean that you should teach your children all the minute details of these sciences, which would be necessary if you intended them to practice medicine and surgery. All I desire is, that the structure of the leading organs of the body should be explained so far as to render their functions intelligible; and, that on this knowledge should be founded a clear and practical elucidation of the laws of health. I can certify, from observation, that this instruction may be communicated to children of ten years of age and upward, with great success. The structure addresses their observing faculties, and an explanation of the functions is as interesting to them as a romantic story.

One great advantage of the training I recommend is, that by bringing the mind into contact with Nature, you give it a sure footing on which to rest. Mere word-learning has no foundation but the opinion of this great doctor, or that great professor, or the third great writer; but when you come to Nature, you feel that it is the work of God, that you are on a rock. This gives healthy activity to the mind, and prepares it to discharge energetically the duties of life. By such a method of training to walk east in the school, you are enabling pupils to walk west in active life.

Then, in the last place, religion should form an important part of education. But, instead of appealing to the religious feelings by words merely, take children to the works of creation, point to the hand of God in all things; and thus teach them not merely a speculative religion for Sunday, but teach them that God is in and around them; that in every movement of their existence they live, move, and have their being, supported by His power, rewarded by His goodness, restrained by His justice and mercy; that every act of their lives has a consequence of good or evil annexed to it, according as it harmonizes with or is in opposition to the immutable laws of our Creator.

The sort of training to which children have been, and are even yet, subjected, may be illustrated by an anecdote which I had from the old lady who is therein mentioned, and who related to me her plan of education and mode of discipline with evident self-satisfaction. Her grandson resided with her, and she took particular pains in his education—the best which she thought it possible to give him being to teach him to repeat by rote psalms and chapters in the Bible. One day John's cousins were coming to visit him, and she was very desirous that he should make an extra display; so she set him double tasks. "Now, Johnny," said she, "learn your tasks well, and I will give you a large piece of bunn." Those who do not know what a Scotch bunn is, need be told that it consists of currants, spices, butter, raisins, almonds, and other things, with just enough of flour to make them stick together. John learned his lesson, ate his piece of bunn, and passed the evening in great excitement with his cousins. When he went to bed, his brain was so much excited that he could not sleep, and his bunn remained undigested on his stomach. Next day, being Sunday, he went to church with his grandmother; but instead of attending to the sermon as usual, he fell asleep. She was much displeased at this, and poked him continually with her elbow to keep him awake, but to no purpose. After church was over, she scolded him, and he promised to sleep at church no more. They took dinner and went to church again, when, in spite of his resolution, and grandmother's poking, John slept again. After coming home she set him to learn two chapters in the Bible—one as his regular task, and one as a punishment. He was ashamed of his conduct, and tried to learn them, but could not. "Oh, Johnny! Johnny!" said his grandmother, "you are a very naughty boy, and I did not expect this from you!" His grandmother's reproaches fell heavily upon John's feelings and he made a great effort to master his task; but in vain. His exhausted brain could not retain one word of the chapters. His efforts, however, caused violent excitement in his head. His cheeks were flushed and his temples throbbed. Suddenly he burst into a loud fit of crying. "What is the matter now, Johnny?" cried the good old lady. "I have got a dreadful tooth-ache," said he. "Oh, Johnny, you see what comes of being a bad boy. God has sent you the tooth-ache as a punishment for sleeping in the church." So thought Johnny's grandmother; but a rational physiologist would say, that it was a lucky circumstance for the child that he had a decayed tooth on which the nervous excitement seized, before his brain was forced into a state of inflammation or some other violent disease was induced. The child was now put to bed and happily awoke next morning refreshed by sleep and well. But it is evident that his grandmother had given him a most erroneous and detrimental view of God's administration of the world, when she ascribed to his vindictive wrath a result that was clearly imputable to her own ignorant infraction of the laws of health which he had established for the welfare of the child. I dwell on this incident the more earnestly because it shows, that mere piety and religious knowledge are not sufficient to guide a parent to rational treatment of a child, without knowledge of its natural constitution.

Just think what must be the effect of such training and instruction. The Grandmother excites his faculties unduly, and does this by bribing his propensities. The indigestible bunn deranges the system, and abstracts the nervous energy from the brain, incapacitating him from attending to the sermon. He sleeps, and is told, that this is committing a great sin. In consequence of the excited and deranged state of the system, a tooth, which happened to have a tendency to disease, begins to ache, and God, he is told, had sent this tooth-ache to punish him for sleeping in church. What an idea this boy must have had of the administration of God's government!

I would advise parents to study the works of Nature for themselves, that when their children, eager for knowledge, inquire from them concerning things, they may be able to answer their inquiries, and not send them away as though they were rude in their behaviour. See well to your schools; let the constitution of man be taught, and its relations to external nature. To do this is imperative; for in this, of all countries under the canopy of heaven, knowledge and virtue are most needed. Your people wield the destinies of this nation, and yet they are essentially an uneducated people, in the sense in which I use the word. How can they govern successfully, when themselves are uninstructed. The eyes of all civilized nations are upon you; you are the hope of the philosopher and the philanthropist. For God's sake, do not shipwreck the cause of humanity!

LECTURE XVI.

THE APPLICATION OF PHRENOLOGY TO THE PRESENT AND PROSPECTIVE CONDITION OF THE UNITED STATES.

Two years ago I was enabled to quit the profession of the law, and devote myself to the science of my affections. I did not come here for want of opportunities or importunities in my own country. Applications to lecture reached me from all parts; so many, indeed, that it would have taken two years to have complied with them all. One reason of my leaving Britain was to give others the opportunity of distinguishing themselves, and showing their zeal by the advocacy of Phrenology. I had also another reason. I have visited many countries, for the purpose of judging for myself the effects of different forms of government on the character and happiness of the people;—Prussia, Austria, Bavaria, France and Switzerland, for instance. Now, your government has presented a problem among nations, of peculiar interest and importance; and I came here for the purpose of judging for myself of its operation, and of sowing among you the seeds of Phrenology.

In the course of my lectures I have made some observations on your institutions; in this lecture I shall make others. But I must always be understood as speaking of things as they appear to me. I once visited a part of Somersetshire in which the soil is very light, and there saw a man guide a light plough drawn by four large horses. "What a waste of strength is here!" I thought. I expressed this opinion to a very intelligent farmer whom I met next day in society. "You, sir," said he, "judge as strangers naturally do, and think we are very foolish; but it is our business to train horses for the London market, and this is the plan we take to break in the young horses to labour, which increases the price when we come to sell them." When I speak of America, I speak from appearances, and as a stranger, liable to draw erroneous inferences.

America is justly proud of her superior constitution and political independence; but if I were to ask different Americans in what the superiority consists, I should have very different answers. Phrenology solves the question more precisely than any other system of mental philosophy. It teaches us that all the faculties seek enjoyment, and take pleasure in activity; that the more and the higher the faculties in action are, the greater the pleasure; and that the fewer and lower the faculties in action, the less the pleasure;—the highest enjoyment, however, being produced by the *virtuous activity of all the faculties.* The question then is—What effect have forms of government on the activity of the faculties?

Austria is a military but still a civilized despotism, and there is great room for the activity of the faculties. The propensities have as full play as in other countries; property is sacred; the laws are justly administered; the social affections may all be indulged with safety; fashion has full scope; Love of Approbation and Self-Esteem are in a great measure provided with gratification by means of rank, title, and government offices. What, then, is wanting?—in what is Austria behind free countries? In this: no activity is allowed to the moral faculties beyond the sphere of private life; the play of the higher sentiments in the social circle, in improving the physical, moral and intellectual condition of the people, is forbidden to all who are not in the employment of the emperor, and positive impediments are thrown in the way of the intellectual faculties. The people are allowed only a certain kind of instruction. They are instructed in the Catholic as the only true religion, and are taught to look upon themselves as beings whose duty is implicit obedience to the government. They are allowed to learn mathematics, Greek and Latin; but every work is carefully prescribed which is deemed likely to disturb the stability of government by enlightening them on political subjects. If a man finds any thing wrong, he must not complain, and strive for its improvement. If he wishes to establish a school for the instruction of his own and his neighbours' children on some new plan, he dares not do it. As an instance of the operation of that government, I may remark, that on visiting the lunatic asylum of Vienna, I found the patients in a most deplorable condition—shut up in cells, two in each, without any exercise, and kept in a way more distressing and cruel than any I had ever seen or heard of. The people of Austria are very benevolent, and deplore these things, but must wait for the action of government. The government itself is benevolent to its own subjects, and supplies these poor lunatics with abundance of food and clothing; but they have neither air, exercise nor employment; they are kept like wild animals in cells, well fed, but no treatment is administered to their minds. On remonstrating with the physician, he told me that no one could be more sensible than himself of the improper treatment suffered by the insane, through the want of proper physical accommodation, but that any servant of the Austrian government who should say things were better any where else, would be told to leave Austria. A manufacturer informed me that in consequence of travelling in England and France, he wished to have his son educated in those countries; but knowing this would not be permitted by the government, he got a passport from one town to another until he arrived at the borders of Switzerland, when he passed him over the line like a piece of contraband goods. You will see by this, that a man whose moral and intellectual faculties are of a high order, must be made to feel the iron in his soul continually; for the higher he is in the moral and intellectual scale, and the more desirous he is to elevate the character of those below him, and raise them to the supremacy of the sentiments, the more keenly does he feel the stern hand of despotism press upon the noblest promptings of his nature, and cramp and fetter his highest aspirations.

Prussia was in the same state as Austria, until the government was overthrown by Napoleon in 1805. After its restoration, however, it saw its former error. The mass of the people had been so oppressed as to lose all national feeling, and fall an easy prey to the invader. To create a national feeling was then the great object, and this could be done only by raising the mass to some importance. Accordingly the serfs were set free, and a system of education adopted which soon brought about a favourable change. Prussia, then, is a despotism, but a liberal despotism. The education provided is superior to that of any other country of Europe, at any rate, and I think we must not except the United States. The government is very well administered; its officers are gentlemanly in their conduct; the post-office is well attended to; the whole of the stage coaches are under the supervision of government, but care is taken that there shall be nothing of which to complain. If a passenger arrive more than the regular conveyance will accommodate, a conveyance is furnished expressly for him. The laws are admirably administered. In what then does the inferiority of this government consist? I have said that happiness is the result of the activity of the faculties; and while the Prussian government does every thing for the people, it allows the people to do nothing for themselves. The following circumstance may serve as an illustration: When I was there, one serious evil began to develope itself. The provision for the education of the females is so much inferior to that of the males, that great disparity is the result, and the former are losing respect. This was much regretted by many, but it was understood that government felt more inclined to diminish the education of the males than to increase that of the females. "But," said I, to a very influential Prussian, "why do you not commence schools yourselves of a higher order?" "You talk," was his reply, "like a Briton. Here nothing must be done without the government; should any private individual attempt to commence an improved public academy for females, without the sanction of government, he would quickly be stopped." Missionary societies have their rules prescribed by government, and spies are at every meeting, to take care that those rules are not violated. Again, the government is so enlightened that it allows the higher minds of the country to publish any work they please concerning government even, so that it contain no appeal to the passions, and is published in an octavo volume of three hundred pages. From the philosophers of Berlin, works appear containing the most liberal and enlightened views, but in a style ill calculated to arouse the energies of the mass, and at a price beyond their reach; but, if, in any practical reform, a man attempts to go forward faster than the government, it immediately arrests his progress; if he persists, it crushes him. In this way is a bridle put into the mouth of the higher sentiments, and their activity curbed.

Let us turn to the government of Great Britain and Ireland. We have enjoyed liberty for centuries, and claim to be the fathers of your liberty. We have the right to say or print what we please, in what form we please; we have the right to do any thing we think proper, providing we interfere not with the rights of others; the exercise of freedom in religious opinions is as great there as here. We have, however, two bulwarks which arrest, to some extent, the activity of the higher sentiments. The first of these is the hereditary aristocracy, which is attended with this great evil: it creates a body of men who have no sympathy with the lower orders, yet have the power of giving effect to their own will, and of keeping the people from the enjoyment of their rights. The existence of such an order has this effect on the middle classes of society: it prevents them from being, as they should be, the natural protectors of those beneath them, leads them when they acquire wealth to look constantly upward with the hope of becoming ranked with the aristocracy; and thus, in fact, do some of the highest and most energetic minds become absorbed into the privileged ranks. And what is the effect? Our humbler classes are, generally, deplorably ignorant; many of them are immoral, and too many of them poor. Every philanthropist must desire to improve their condition. But frequently men of the lower and middling classes, who, by superior talents and energy, rise in the scale of fortune and influence are ashamed of the class whence they sprung, and, instead of striving with them and for them, they put their heels upon and assist to crush them. They are blinded to the evils and degradations which they themselves have escaped, are parties to the continuance of wrongs which should wring their hearts with sympathy, and the hope of removing which should nerve their arms with more than human energy. But instead, the aristocracy gathers around it the principal talent of the country from every other class; and the influence of their rank is such, that if two men come forward for office, one a lord and the other low-born, whatever may be the character of the former, he will, in general, receive ten votes for the other's one; in short he would carry the election against the angel Gabriel.

The other institution to which I alluded is the Church of England. A vast number of men are privileged by law to expound religion, for which they receive immense emoluments. The parliament, some centuries ago, when people were neither wiser nor better than they are now, fixed certain interpretations of scripture as containing the only true will of God, and prescribed particular tenets as necessary to salvation. To these tenets men must subscribe before they are permitted to enter on the duties of various official stations. This doubtless leads to hypocrisy in many, and acts as a barrier to high minded men. There is a strong party in England and Scotland, who advocate national education. The national churches of both countries say —We will agree to it, if you will give us the control of the system. But the dissenters say—No! we cannot do that. Thus, through the influence of these political church-establishments, this most important measure is prevented from coming into operation. The authoritative declaration by public men of certain points of faith, as being the only true expositions of the will of God, the offering of large emoluments to those persons who choose to espouse these interpretations, and visiting with obloquy, exclusion and disqualification those who doubt them, and especially the investing of these dogmas with the attribute of infallible truth, so that every man who proposes to improve them, is punished for heresy, and excluded from Christian privileges, is at once to anchor theology so that it shall be impossible for it to advance with the increasing knowledge of the age, and to tie up the moral and intellectual faculties of society from all free honest and independent activity in the highest and most momentous field of human enquiry —religion. This union of church and state—this anchoring of religion, doubtless trammels the activity of the moral and intellectual faculties; the tendency of which is always, when allowed fair play, to raise the character of a people. In this country you are free from such shackles. The faculties are allowed to take their full swing; you have no hereditary aristocracy to lord it over you—no established church to tell you peremptorily what you must or should believe. And this is the great distinction between your government and ours; an advantage which none but such as are acquainted with the true philosophy of mind can fully appreciate. Do you fully appreciate these high privileges? I think that many look upon them as a matter rather of bragging and egotism than any thing else.

We have seen that in Austria the higher faculties are kept as in a stagnant pool; that in Prussia they are allowed much more activity; in England vastly more; and that in this country they are allowed full swing. Now all the faculties have a sphere of virtuous activity, but they have also a wide sphere of abuse. For instance, it is impossible to live here six months without seeing the many temptations to which Acquisitiveness is subjected. I have before said that to this faculty we are indebted for momentous obligations. It inspires us with the love of acquisition, which prompts us to build ships, to construct roads, to make canals, to gather around us the comforts—the conveniences—the luxuries of life; but to its activity Providence has set limits, which limits many seem to overlook. Acquisitiveness is burning in its desires morning, noon and night; men forget the conditions on which the accumulation of property depends, and strive to obtain it by improper means. Wealth does not come like rain from the clouds, neither can it be gathered in the streets. It is the product of labour, skill, and energy assiduously applied in some useful pursuit. By gambling and speculation men may create a sudden and fictitious, an unjust and injurious distribution of wealth; but they cannot, by such means, create wealth itself; any more than they can add a bushel of wheat to the sum total of last year's crop by speculating on its rise or fall. Many of your people appear to me to be so much excited by the blind impulses of Acquisitiveness, that they never spend a thought upon the laws which nature has prescribed to the production and distribution of wealth. They gamble and speculate instead of labouring to produce and acquire property according to nature's conditions. They "hasten to be rich and fall into a snare." On what wealth does depend, it becomes you to teach your children; and to obtain it in a proper manner it becomes you to train them. Recollect, that Acquisitiveness is one of the propensities, and should be subordinate to the moral sentiments. Bear in mind the beautiful saying of Sir Walter Scott when on his death-bed. "Remember," said he to a relative, "that the good which you have done to others is the only thing which will give consolation when you come to be where I now am."

Self-Esteem is the fountain of independence. It was Self-Esteem that led your ancestors to these shores. They could not brook the injustice and indignities that were heaped upon them in their native land, and preferred the wilderness with freedom, to the homes of their fathers accompanied by mental bondage and degradation. It was Self-Esteem that achieved your independence. You owe it much; but take care that it become not excessive. You have no hereditary aristocracy; each man feels his weight as an influencer of public affairs; and you may become so enamoured of your own importance, as to forget that you need improvement;—like the man of great talent, mentioned by Madame de Stael, who, instead of making himself useful, spent his time in admiring the marvellous sum of his own attainments. The stock of useful and refined knowledge and of solid moral and religious qualities, which you, as a people, possess, constitutes your real excellence; but Self-Esteem does not measure itself by these. It measures itself by itself, and it is often most highly gratified when these are very greatly deficient. You should guard your children against illusions of this faculty and teach them to estimate themselves by the real standard of positive attainments.

In this country your institutions cultivate Love of Approbation with extraordinary force. Before a man can wield influence, acquire distinction, or rise in the scale of social estimation, he must be popular; and no man can acquire popularity by the fearless manifestation of his moral sentiments and intellect, because the people are not always calm, wise, intelligent and virtuous, and they rarely give their voices to those who tell them that they are in the wrong.—Your institutions offer a strong inducement, therefore, to public men to substitute flattery for truth, in their addresses to the people. It has struck me that moral courage, or that high minded independence which seeks the true and the useful at all hazards, and relies on the right for vindicating itself and for sustaining its advocates through all perils, is not so abundant in this country as its welfare demands.—Each man is afraid of stepping forward to press any unpopular measure, lest he should hurt the Self-Esteem of others, and should himself lose popularity. If this be so, the mind is in a great measure bound here, as in despotic countries. The great tendency of Self-Esteem and Love of Approbation, when undirected by the higher sentiments, would be to obtain place and popularity by fawning upon and flattering the people, and pampering their prejudices. The moral sentiments would lead men to seek the highest interest of the people, by raising their character, even if they had to press upon their attention unpalatable truths. The distinction is well worthy of remembrance.

The great superiority of your institutions, then, appears to me to consist in their permitting the fullest activity of all the faculties; and the duty of every citizen is so to manifest them in his public and private deportment, that each power shall play gracefully and happily within the sphere of its legitimate action. It has been said sarcastically of your people that they consider themselves so free as to be independent even of the natural laws. Every man who does not recognize an obligation on himself, imposed by the law of God, to act nobly, honourably, and rationally in proportion to his freedom from human tyranny, has not yet formed a conception of the first element of liberty.—Washington told you that, by an eternal decree of Providence, happiness can exist only in the proportion in which virtue is practised, and his whole life was a commentary on this precept. Phrenology leads us to the same conclusion. Virtue cannot be learned by listening to precepts; it requires a field of action; and your institutions are invaluable as affording the widest and freest field for virtuous action ever enjoyed by any people in the world. All history affords examples that *action* is the only mode by which virtuous habits can be formed. We see that, during the French Revolution, blood and rapine stalked through the country. And why? Clearly because under the *ancien regime*, the moral and intellectual faculties of the nation had been denied all legitimate sphere of action, they were dormant and their organs feeble. When the people burst suddenly with freedom, a vast impulse was given to all their faculties. Their animal propensities took the lead, as they always do when they have not been trained, *in action*, to obey the higher powers, and every crime that could degrade and disgrace our nature was committed. This point is well illustrated, too, by the conduct of the ministers of the Scotch Church. This Church is a republic, the ministers in general assembly forming the legislature. Now each minister is, in his own parish, treated with the greatest deference, and is quite unused to contradiction. He is not tried by exciting causes applied to his lower propensities; and his moral sentiments are, therefore, not trained to restrain and direct them, when excited by external provocations. When the Synod meets, the members seem to expect that the same deference shall be paid to their opinions there as at home; and when the correctness of their arguments or sentiments is doubted, or they meet with contradiction, the most stormy and abusive scenes ensue, utterly astonishing not only to the people, but even to the ministers themselves. To such an extent is this carried, that Dr. Andrew Thomson, one of its most distinguished members, designated the Scotch Synod as the most unprincipled assembly in Europe. Regard your Institutions, then, as a great field for training the propensities of your people to obey the guidance of the moral and intellectual powers, and you will not only reap a rich reward of prosperity and happiness, but cheer the soul of every friend of freedom all over the world. Every outrage committed here against social order, every infringement of justice, every low and degrading habit that can be laid to your charge, is balm to the souls of the despots of Europe; the accounts of all your errors and misdeeds, and imperfections are faithfully transferred into every chronicle under the despot's sway, and the face of freedom is through you, represented, to the enthralled slaves, as hideous and vengeful. While the despot rejoices, the philanthropist hangs his head in sorrow and in shame. Reverse the picture; show honour, justice, religion, philanthropy, triumphant in your public and private character, and you will ring the knell of despotism in every clime.—This is no theory. I was told in Vienna, by a person high in the Imperial service, that the knowledge of your prosperity and that of France and England, was silently affecting the minds of the middling classes in the Austrian towns with discontent. That discontent, if you do your duty to Liberty, will ripen into an irresistible resolve to be free.

The next question is—In what way may the best activity of the faculties be promoted?—and what kind of education is most rational? That to answer this, a true exposition of the mental constitution of man is necessary, cannot be doubted; and if Phrenology be not true, where shall that exposition be found? Some may answer, common sense is a sufficient guide. But there is much error propagated under the sanction of what is called common sense. Bishop Whately has well exposed it. Ask a sailor about medical matters, and he will tell you that for the cure of disease common sense is quite sufficient; but ask him whether a man can navigate a ship by common sense, he will hold you in contempt for the question, and inform you that common sense would soon send you to the bottom of the sea. Ask a blacksmith what preparation a preacher needs, he will probably tell you, a little common sense; but ask him whether a man can shoe a horse by common sense: he is astonished at your ignorance, and informs you that you would soon get your brains kicked out for your attempt. Every man, in short, is willing to trust common sense in whatever is not intimately connected with his own immediate employment; but in that he sees the absurdity of such dependence. So in the business of education: every man thinks common sense all sufficient, and each calls his own notions of the matter common sense. No need of the philosophy of mind, they imagine, for the mother and the teacher; that is, the human mind can be trained, in ignorance of its true nature.

But in fact every man, whose business it is to deal with the human mind, has a system of mental philosophy of his own, according to which he decides and acts. It may be a very imperfect system; he may not recognize it as a system, but still it serves him as one, and by it he tries whatever questions may arise in which mental acts or processes are involved. In this case each man, in lack of a standard of mental philosophy, takes himself as a standard; but there can be no agreement as to the true mode of education, until we have a system of mental philosophy on which all agree. And I say again, if Phrenology be not that system, where is it? For God's sake make it known, for a system we must have. Before men can teach, they must know. There ought to be schools for instructing teachers; and of the things taught, the constitution of man should be considered the most essential; but before it can be taught, it must be known. It may be said that the Legislature could prescribe a system of instruction for youth which should come in place of a mental philosophy. This it could do; but it would doubtless be drawn up in accordance with common sense. The question is, how will such a system agree with nature? Each teacher will think his common sense equal to theirs; and this is the last country in the world in which individuals are likely to be influenced by mere authority. To do any good—to have any uniformity, we must penetrate to the very foundations of nature; and it is the beauty of your institutions, that when nature is recognized, it may instantly be followed. That such a system is not yet generally acknowledged, is evident from the vast differences of opinion which exist on the proper mode of conducting education. Go to Paris, to London, to New-York, ask about any principle of chemistry, and you will find perfect agreement. True, there are points on which chemists differ; but then such points are a *terra incognita* in which science has not yet been reached. But ask men about education, and you hardly find two to agree; nor, until we have a true science of the human mind generally acknowledged, can there be such an agreement; nor till there is such an agreement, can there be any united and well-directed efforts.

Before much improvement can be expected, teachers must be raised in consideration and social rank; and this can be accomplished only by increasing their own valuable attainments, and by teaching the people to appreciate and honour such qualities. In my own country, they are now not generally reckoned as fit companions for gentlemen; they are not presented to company. Whence does this arise? From the circumstance, it appears to me, that their occupation has not been scientific, but empirical. But this must be allowed: If the man who takes care of our bodies is considered equal with the best of us, surely the man who takes care of the mind—trains and instructs it, should not be considered as below our companionship. So to consider him is a relic of barbarism.

The great importance of a true philosophy of mind and correct process of training to the welfare and proper administration of your government is evident from this consideration. The majority of all the voters in the United

States are under thirty-five years of age, and this majority disposes of the whole interests of this great nation. Now there is no country in the world ruled by men so young, so inexperienced. Before coming here, I was told that you are the most excitable people on earth; and, since arriving, I think I have seen what proves the assertion to be true. And this, it appears to me, is the reason: Before thirty-five, all the propensities are in their greatest activity. By a law of our nature, they are far more energetic than at fifty or sixty; and, before thirty-five, life has not been long enough to supply the deficiences and correct the errors of improper education. Education, then—correct education, moral training, instruction concerning the nature of man, the true sphere of his faculties, and the consequences of allowing the propensities to take the rein—instruction in the nature of wealth, of government, and the true ends of law, should be carried to their fullest extent, in order to compensate by education, as far as possible, for the want of experience. To place the destinies of a nation in the hands of men full of young blood without such preparation is extremely hazardous.

There is, however, one great advantage which you possess over many other countries, and that is in the number of safety valves through which explosions of public opinion may take place without endangering your whole institutions. In Austria the safety valves to opinion are few, and these are so loaded by oppressive laws and standing armies that it is difficult for an explosion to take place; but, should it do so, it would carry ruin and desolation in its course. Your safety valves are not much loaded, and in number they are ten thousand times ten thousand. An explosion takes place, and passes quickly away. The timid bend their ears and prognosticate utter destruction: it is because they do not understand your government. Here the excited and misguided propensities rage and roar, but its only for a day; their fervour is let off by a thousand outlets, and reason and morality speedily resume their sway. Recollect, however, that any explosion, though it is far from destroying the government, shakes credit and leaves a pang. Let your safety valves be loaded with knowledge, and you need not fear the issue.

The first thing, then, that you require, is a true philosophy of mind; then teachers well trained and instructed according to this philosophy, who should be ranked as high in public estimation as any class of professional men. Then you require the parents to assist the teachers in their duties, which may be done in many ways. And on the parents, after all, two-thirds of all the effect produced depends. As an instance of what may be done by parents, I may mention a gentleman of Boston who gives his sons the shipping list of an evening, questions them about the places from which the ships come, gets them to point out the places on the map, questions them about the cargo, where and how manufactured or produced, and in this way he connects the instruction of the school with the practical business of life.

Especially would I press upon your attention the importance of educating women not merely in embroidery and music, but in a knowledge of things, especially in a knowledge of the human constitution. Every man must acknowledge that Woman operates on human character in the most powerful manner. She works on soil highly susceptible of impressions. To send her out into society to be a wife and mother, without one philosophical idea, appears to me utterly barbarous and absurd. Irrational as has been the education of boys, the education of young ladies has been and is much more so. Aroused to the importance of this subject, some institutions have recently been commenced providing for their education in a much more ample manner than heretofore. We have established in Edinburgh a sort of female college, called "The Scottish Institution for the education of Young Ladies." The annual charge of which is twenty guineas; for this may be pursued under the most able professors, a course of study almost co-extensive with that of the Edinburgh College.

The pupils are for the day under the general guardianship of the lady superintendent, to whom is intrusted the guidance of their morals and behaviour. The following are the branches taught in this establishment; Elocution and Composition, History and Geography, Writing, Arithmetic, and Book-keeping; theory of Music and the Piano Forte, Singing, Dancing and Perspective; Mathematics, Astronomy and Mathematical Geography; Italian language and Literature, Dancing and Calisthenics, besides which there are regular courses of Lectures on Natural Philosophy, Chemistry, Natural History, Geology and Mineralogy, as well as on Physiology and Ancient and Modern History. These Lectures are delivered by the Collegiate Professors.

You want a true philosophy of mind, to give more permanence and uniformity to religious opinions—to teach you the nature of the instrument by which you read the scriptures, and the absurdity of any man assuming infallibility in the interpretation of mere doctrinal points. In the old country there is a surprising feeling of insecurity about religion. They seem to think it a pyramid resting on its apex; and you see the bishops and parsons on one side, the deacons on another, and the laymen on the third, straining themselves to keep it up, all seeming to think that if they were to withdraw *their* support, it would fall into a thousand pieces. But when you see, by means of Phrenology, that religion springs from the human faculties as wheat springs from the soil in which it has been sown, you perceive religion like a pyramid on its base. You feel the utmost confidence that it can never be shaken—much less overthrown, and that to attempt its destruction would be like pushing against the everlasting rocks. A knowledge of the human faculties would teach men that from the different degrees of development of the various feelings have the various sects arisen. From Veneration arises the tendency to adore; from Wonder the tendency to dwell on the astonishing and supernatural; from Hope brilliant anticipations of the future; from Ideality love of the perfect and beautiful; from Conscientiousness the love of justice; from Benevolence the love of goodness and charity. Now religion appears to me to be still in the scholastic state; the existing interpretations of the scripture have been adopted in much ignorance both of external nature and the human mind. The interpreters have assumed each his own mental constitution as the standard of nature, and as they have been variously endowed, they have interpreted the scriptures in such a way as to gratify their predominating faculties, instead of in accordance with the true philosophy of man. As men become more enlightened, they will perceive that they have been contending principally about minor points. They will learn to distinguish what is essential from what is unessential. They will become more charitable and more united in the bonds of amity and love, There is now a state of transition which occasions those who perceive not the true state of things to feel particularly uneasy. They imagine that the ground is passing away from under them. Many existing interpretations do indeed totter; but let not the most timid fear: these tremblings will merely shake off the errors which adhere to Christianity, obstruct its progress, and impair its usefulness.

The enemies of Education say that Crime increases in proportion as Education is promoted; and the statistical returns seem to favour their assertions. But they forget that what is called Education is merely instruction in words or signs. The instruments of Education have been put into men's hands, but they have not been educated. They have received no proper instruction concerning either physical or human nature, and have not been trained to the practice of goodness. Let the opponents of Education show that Crime has been increased by training the intellectand moral sentiments to proper activity, and then we will give the matter up.

There is a great difference in the mode of treating criminals in different countries, and it is pleasing to see you take the lead in criminal jurisprudence. But to inflict a certain amount of punishment for a certain amount of crime seems to be the chief resource, after all. In some countries men are scourged; here you lock them up in cells. The laws of all countries prescribe a certain quantity of suffering as the retribution for a certain extent of crime, without inquiring into the *causes* of the *crime*, or the *effects* of the *punishment*. This is legislating for a fact, and not with reference to its cause and the results of the treatment. Phrenology will lead men to see that crime cannot be prevented till its causes are removed; and that there are excessive or defective developments of certain organs in the brain, acting under the influence of adverse local circumstances. I have said that criminals are scourged and locked up in cells. Now what effect have these punishments on the mind? Certainly not the only desirable one, to diminish the activity of the propensities and increase that of the sentiments. Nay, you deprive the man of all stimulus, to the moral faculties, leave him to the constant brooding of revenge, and render him not a better but a more cunning man. Hard labour, low diet and silence, have been tried, There is no doubt that they enfeeble the propensities; but they do so by enfeebling the whole mind. Now, you want a course of treatment which will enfeeble the propensities, while it strengthens the moral sentiments. A few years ago tread-mills were the rage. The Phrenologist, knowing that fatiguing the muscles would neither permanently diminish the causes of crime, the over activity of the propensities, nor increase the activity of the sentiments, laughed at the idea. Phrenology teaches us that with one class of minds we should proceed by keeping them from association with the degraded and immoral, use every means to cultivate the higher sentiments, and increase the number of higher minds that hold communication with them. The lowest class of criminals should be kept in perpetual restraint.

The treatment of the insane is a matter of vast importance. The most afflicted of the human race, they have had their afflictions increased tenfold by the ignorant and inhuman treatment to which they have been subjected: small grated cells, and chains, and flagellations, and insults, have been their lot. Much amelioration has indeed taken place in many sections, but much remains to be done. To know the true mode of treatment, we must understand the mind, its mode of manifestation, and its dependence on material organization. And what teaches this but Phrenology? Accordingly, Phrenology has been the great reformer of the treatment of the insane.

I read to-day of a woman in easy circumstances who had cut her child's throat and then killed herself. The Phrenologist at once recognizes in this case unequivocal evidence of disease. By the spread of Phrenology attention will be called to diseased conditions of the brain in their early manifestations; and by proper remedial measures they will be arrested in their early stages. Phrenology, too, will enable men to give rational evidence in courts on cases of insanity, instead of the inconsistent, contradictory and absurd evidence which is now given.

Phrenology has a great tendency to encourage and give confidence to the good. In my own country, men with a large coronal region, reflective faculties and ideality, shrink from the turmoil, bustle and degradation consequent on becoming a candidate for public office; and those who are most eager after distinction are often found to have little except Self-Esteem and Love of Approbation to recommend them, their coronal region being often small. They will send round their emissaries to learn what opinions or measures are popular among the electors, and then come out in their advocacy with all their might. The people are thus pleased and deceived into the election of an unworthy man. When Phrenology shall be well known, the highly moral and intellectual men will find their place, and stand shoulder to shoulder in the great work of human advancement.

It is a law of nature that for moral advancement to take place we must love our neighbour as ourselves. The condition of each influences the happiness of the rest. We see this illustrated in the letters of the Secretary to the Governor of Van Dieman's Land. The influence of the character of the convicts on the society there is most striking. The change is great even in the most virtuous. The convicts have to be governed by the lash: in them the propensities fearfully predominate, and the masters are continually harassed and soured by suspicion and watching. So in Ireland the great mass of the people is in a wretched and degraded condition. I have seen their wretchedness and its effects on the higher classes. In this country, as in others, men must have their neighbours happy that they may be happy themselves. For this you should continually strive; you cannot stand still; you must advance into the region of the sentiments or fall back on the propensities. Some think you are doing the latter—but of this I have little fear: you are the pyramid on its base. I do entreat of you to justify this opinion by educating all your children in a manner which shall give superiority to the intellect and moral sentiments. It has been well said by a gentletleman of Boston, that in America you have taken every man in the country into copartnery: it is a copartnery for life—you cannot dissolve it if you would. Among you especially, then, is the happiness and welfare of each linked with the happiness and welfare of all. To elevate the character of your whole population should therefore be your highest aim.

Phrenology, it is stated, has been injured by quackery. If so, it is the fault of those who should have been its warmest supporters. If thrust out of refined society, it must take refuge with the humble. Are we never to be taught by experience? Will men go on forever treating important discoveries with contumely? The clergy have been strong opponents of Phrenology; and this is to be regretted; but the history of the world shows that in all ages religion has been thrown at the head of science. They seem to forget the plain proposition that what does exist does exist, and cannot be overthrown; that God is the author of nature as well as of revelation, and therefore no want of harmony is possible; that all truth, in short, is God's truth. For the clergy, however, I beg leave to apologize. Principal Baird once remarked to me that the clergy stand in a peculiar position—having their own arduous tasks to perform, and to deal with all kinds of minds. "All you can expect from us," said he, "is that we stand aside till you convince the people of the truth of your doctrines," We should be well pleased if the clergy would follow this course, They are not called upon to take the lead in every novel doctrine that appears; but what I complain of is, that many of them, in profound ignorance of the nature, merits and evidence of Phrenology, throw the whole weight of their individual and professional character into the scale against it, and imbue many excellent minds with the worst prejudices regarding its consequences. If Phrenology be true it is God's truth, and to calumniate it, in His name, is to commit treason against God and against God's people. It is clothing human pride, sloth, ignorance and folly with the sanctity which belongs only to the everlasting truth.—It is employing the Creator's name to scare away his people from examining his works. It is strengthening the hands of the Infidel; because in due season, the truth will force its way to universal acceptation and the Infidel will then turn round and say, "These men cannot be the true interpreters of God's will, because they have not recognized God's works when presented before them but have calumniated and repelled it." If Phrenology be false they are right; but I declare to you with a full consciousness of the responsibility which I incur, that I have never seen more futile, disingenuous, and discreditable objections; objections more destitute of truth, honesty, and reason than those which have proceeded from many of the religious publications of my own country and from men pretending to the religious character. You can judge better than I can do, whether a similar or a better spirit reigns among religious persons here.

Phrenology is now extensively believed in England, and would have met with a much better reception at first, had it not unfortunately fallen into the hands of professors and reviewers of second or third rate talents, who, startled by its novelty and incapable of comprehending its nature or evidence, poured forth torrents of abuse and misrepresentation, which imbued the public mind, then enjoying no other means of information, with the worst prejudices against it. Physicians and ministers should both strive to compensate for the retardation they have caused. Let the former recollect that Phrenology constitutes the noblest branch of Physiology, and the latter that there cannot be two Gods, a God of nature and a God of revelation. To those who, being convinced of the truths of Phrenology, acknowledge and advocate them with assiduity, regardless of the prejudices that are arrayed against them, I offer the humble tribute of my praise. Verily they shall have their reward.

With gratitude for the great attention you have paid to my observations throughout the course, with the hope that my humble efforts, of the imperfections of which I am deeply sensible, may be of some service, and with a sincere desire for your welfare, I bid you adieu.

THE END.

APPENDIX.

CAN THE MENTAL CHARACTER BE ACCURATELY ESTIMATED FROM EXTERNAL DEVELOPMENT?

He who has followed the gifted lecturer through his entire course, will acknowledge that the extent to which phrenology enables us to ascertain individual character from external signs, constitutes a very small part only of its utility. Indeed, the diagnostic means which phrenology affords, have, I think, been much overrated and thrust forward into unmerited prominence. It may be useful, therefore, to correct the erroneous impressions thus produced, and to define the limitations prescribed, as well by the present state of our knowledge as by the nature of things.

I remark, in the first place, that we are acquainted with thirty-six only of the mental faculties, but besides these there are others, with the nature and qualities of which we are unacquainted. The impossibility, of ascertaining the precise nature of a compound, in ignorance of some of its elementary constituents, is perfectly obvious. Setting aside, however, this decided negative to the leading question, let us proceed as though we were acquainted with all the mental faculties, and with the external signs of all. What in that case would be the answer?

To judge of character by development it is necessary

1. To ascertain in the given individual the relative size of each organ as a guide to its relative power.

2. To estimate the mutual influence of the organs and the combinations into which they would be most likely to enter.

3. To estimate the general constitutional activity or temperament of the individual examined.

All these things are difficult of accurate accomplishment, but present no insurmountable obstacles to knowledge, care, experience and good cerebral organization.

Be it remembered however, that character depends on the mutual operation of organization and external influences, and that of the latter the organization presents *no external sign*. To elucidate this important principle, some acquaintance with physiological laws is indispensible. Let me observe then that each organ of the body is endowed, by means of its nervous matter, with a peculiar sensibility or a power of perceiving its peculiar stimulus, thus the eye has the power of perceiving light and light only; the ear, of perceiving sound and sound only. But the actual perception, depends, in every instance, on the stimulus being presented. Without light, the eye's capacity would be undeveloped; just as as without the eye, light would be unperceived. The same is true of the cerebral organs. The activity of an organ depends, 1st, on its power of perception, 2d, on the presentation of whatever it is adapted to perceive. Thus, the organ of Colour is sensible to colour and to colour only, and the organ of Form to configuration and that only; without the organ, colour would be unperceived, and without colour the organ's power would remain undeveloped and consequently unknown.

But not only does the activity of an organ depend on the presentation of its appropriate stimulus, but the *degree of its activity* depends greatly upon the *amount or intensity* of the stimulus presented. There is an invariable correllation between the appeal and the response: thus though a vigorous eye can see better by a faint light than can a feeble one, it is nevertheless true that a feeble eye can see better by daylight than a vigorous one by moonlight. So of the cerebral organs two may be alike in constitutional power and activity, yet one be manifested in the character much more strongly than the other, owing to the different strength of the exciting causes to which they are severally apposed. Now of the different external influences to which the faculties are subjected *we have not, and never can have, any organic signs*. False and mischievous, then, are the pretensions of those who assert that they can ascertain character correctly by the organization alone.

But still farther, many conditions of the organization itself are not indicated by external signs, as will presently appear.

Be it ever remembered that the brain is a part of the living organized body, and like all other parts is subject to certain general physiological laws. Like them it is nourished, grows, decays and perishes. Like them it may be rendered inert, languid, feeble and irregular, by disease or insufficient food or exercise. Like them, too, it may be stimulated to unwonted energy, or, by judicious exercise, be increased in size or in aptitude, facility, vigour and certainty of action. Leaving out of view, however, all other considerations, I will now dwell on the effects of training or discipline alone.

'The cerebral like all other organs, may be diminished in size by the withholding of their appropriate excitants, that is by being kept in a state of inactivity, and they may be increased in size by active and judicious training. *But*, and mark this, though the increase or diminution *may be visible externally*, it *may not be*. The former will happen when the organs enlarge simultaneously, or when none diminish in size but some increase. The latter will take place when some increase and some diminish simultaneously, for as all the cerebral organs are united in one mass of yielding consistency, it is quite possible for even considerable changes to be produced unattended by any alteration in the cranium, one organ occupying somewhat less space, and another somewhat more than in their previous condition. I think it not improbable that changes may be thus continually going on which being confined to the interior of the cranium, *are not indicated externally*.

But judicious training may, and in adult age generally does, increase the compactness, strength and tone, of an organ's fibres, its aptitude for ready, certain and energetic action, its practical efficiency, without increasing its size. Now the organs of the brain are distinct though correllated parts, and may to a great extent be separately trained. Hence it follows, as a matter of course, that on two organs of like relative size and constitutional activity, being subjected at a given time to equally powerful exciting causes, the one, *owing to difference of training*, may act with ease, energy and correctness, and the other with difficulty, feebleness and uncertainty. Even if we admit then, that Phrenology furnishes us with external signs of an organ's *capacity of being trained*, we must allow that of an organ's *actual state of discipline*, of its *present efficient power, it affords us no cranial indications whatever.*

Again, many phrenologists speak of the *different qualities* of various brains, thus the brains of Byron and Sir Walter Scott, are said to have been of fine quality, and this is stated by Mr. Jones, for instance in his "Practical Phrenology," (p. 214,) to be "a different consideration" to temperament. Of this difference of quality *there is no well ascertained external signs.*

Again, there is a quality called by Mr. Combe *retentiveness* of memory, (see page 289) which differs greatly in different individuals. For this quality *we have no external sign.*

But still farther the brain, as Mr. Combe explained in his third lecture, is composed of two substances, an external or cineritious, and an internal or medullary. Facts have been lately observed which give great probability to a doctrine long ago surmised, that the internal portion is merely the conveyor, while the external is the recipient of sensation, and the generator of action. That the cineritious portion of the brain is in reality the organ of mind; and though we may conclude *a priori* that there will be an intimate correspondence between the generator and transmitter of mental action; it is indubitable that the thickness of the cineritious matter differs greatly in different brains of the same general bulk. Of this difference *we have not, and it seems impossible that we ever should have, any external indications.*

But while I would cast from phrenology all false pretensions, I would steadfastly maintain the real superiority which it confers. The organization of an individual, as far as it can be known, and external influences being given, we can solve the question of human character, not indeed with precise, but with approximating accuracy. The non-phrenologist cannot commence the solution. Give him the external circumstances, ignorant as he is of organization, he could have not the slightest reason for stating whether the individual would prove a Byng, or a Nelson, a Burr, or a Washington, an image-maker or a Canova, a nostrum vender or a Hunter, a street brawler or a Burke. They would not have been able like Gall, to foretell, from an examination of their respective organizations and pursuits, the astonishing superiority which Napoleon would manifest over the Austrian Generals, in the wars of Italy.

If an organ be very deficient in size, no amount of the most judicious training can make it display great energy, and when the phrenologist observes such an organ he can say with the most perfect confidence, and without reference to previous training or external influences, that in all actions for which its energetic play is requisite, the individual will manifest feebleness or inefficiency. If an organ, on the contrary, greatly predominate, it *hungers*, as it were, for stimulus, and responds to it when presented, with such vigorous, rapid and pleasurable energy, as disposes the individual to indulge it. The tendency of such an organ is, therefore, to overpower the appeals of the weaker organs, or to bring them into subservient activity, and though judicious training may greatly modify this tendency, the organ will still exert a powerful influence over the character, and this the phrenologist can state without the slightest fear of mistake.

Starting from extremes, both as regards the distinct organs and the regions, we proceed to heads in which they are more and more equally developed, till we arrive at such as that of Maxwell, in which they are so equably poised, that from the organization alone the phrenologist can infer nothing with certainty, except that the character of its possessor is swayed by external circumstances. Placed amid elevating and refining influences, where Conscientiousness, Veneration, Benevolence, Ideality and the other superior sentiments are highly stimulated, and the propensities have virtuous means of gratification, he may sustain a reputation for Justice, Benevolence, and Piety; surrounded by obnoxious influences, in which the higher sentiments have little or no external stimuli, but Acquisitiveness, Secretiveness, Destructiveness, and the lower propensities generally, are highly stimulated, he may be a debauchee, a robber, or a murderer, whose end is the felon's cell or the scaffold.

We are now prepared to pass judgment on certain practices prevalent in society. It is well known that persons calling themselves "practical phrenologists," have for years been peripitating through this and other countries, asserting and publishing their ability to ascertain character by cerebral development alone, and their readiness to do so for any one who would pay them a certain fee. Some of these have been men almost destitute both of knowledge and experience, such are beneath respectful remonstrance, they are swindlers and they know that they are swindlers, meriting whatever punishment may be due to those who obtain money under false pretences. But some good phrenologists seem to have deceived themselves into the belief that they really possess this power. I think I have clearly shown however, that whoever asserts that he has it, affirms that which, in no case, is absolutely true, and which, in many cases, is absolutely false, and I deem the considerations which I have presented sufficient to prove that promiscuous head-examining, as now practiced, is an occupation which no honorable and conscientious man should persist in, for while it may often set the ignorant agape at the accuracy with which some prominent trait of a well marked character is announced, it makes the enlightened phrenologist grieve over the abuse and degradation of his science, and gives countenance to the false and baneful impression that phrenology is akin to juggling and palmistry.

In the foregoing observations, be it remarked, there is nothing condemnatory of private examinations, for the sake of information or mutual instruction. There is nothing, indeed, which would militate against gentlemen of extensive knowledge and experience, good judgment and high moral feeling, devoting themselves, under proper restrictions, to practical phrenology as a business, provided that they state fully, in every case, the uncertainties which may exist. They might be of great service by classifying criminals and superintending their moral training; by aiding in the moral treatment of the insane, by pointing out any strikingly deficient or predominant organ in children, and laying down a course of procedure for improving the organization, and even by assisting adults in their efforts for self knowledge. But it would doubtless be far better that teachers and the superintendants of prisons and insane asylums, should be able phrenologists, than that "Practical Phrenology" should be rendered a distinct profession.

I have heard it stated in favour of promiscuous and indiscriminate "head-reading," that many have been "converted" to phrenology, by having their heads "read." Leaving out of the question the greater numbers who have been disgusted by it, I reply that if this be so, their belief based upon such grounds, though of no service to themselves, may possibly be servicable to phrenology, if something affecting it should have to be decided by numerical force, but not till then. Such believers are obviously of the number of those who observe and reason by proxy.

Before sending this note to press I received the August No. of the American Phrenological Journal, in which is an admirable Essay by Dr. Caldwell, containing these words: " It need hardly be added, that a practiced and skilful phrenologist, finds no difficulty in ascertaining, with sufficient accuracy, the *comparative size* of the different compartments of the brain in the head he examines. In his efforts, *therefore*, to decypher character, he *may* be *always successful*." This opinion caused me to reconsider the foregoing remarks, but finding in the statements and reasonings nothing which I deemed incorrect, I think it my duty to publish them, and indeed the more so, on account of the views held by one who stands so deservedly high as a phrenologist, appearing to me untenable.

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